ALPHA ACTIVE® 4 SYSTEM

Service Manual

ARJOHUNTLEIGH
GETINGE GROUP

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CHAPTER 1

INTRODUCTION

1 About This Manual

ArjoHuntleigh strongly recommend that their equipment is only serviced by trained personnel and provide courses for customers who wish to become licensed to service their own equipment. In no event will ArjoHuntleigh be responsible for any service performed by customers or third parties.

This manual contains information on maintenance, servicing, repair, troubleshooting and testing for the **Alpha Active 4** system, which comprises of a pump and a mattress replacement.

Read and understand this manual before attempting to service or repair the equipment.

Numbering and Cross-Referencing in this Manual

For all chapters in this manual:

- Page, section and paragraph numbering re-start at “1”.
- Figure and table numbering continue from the previous chapter.
- Cross-references, which include a chapter number (and/or chapter title) refer to text in a different chapter. Cross-references which do NOT include any chapter number (or chapter title) refer to text within the same chapter.

Warnings, Cautions and Notes

WARNINGS given in this manual identify possible hazards in procedures or conditions which, if not correctly followed, could result in death, injury or other serious adverse reactions.

CAUTIONS given in this manual identify possible hazards in procedures or conditions which, if not correctly followed, could result in equipment failure or damage.

Notes given in this manual are used to explain or amplify a procedure or condition.

WARNING: BEFORE PERFORMING ANY SERVICE OR MAINTENANCE PROCEDURES, ENSURE THAT THE EQUIPMENT HAS BEEN ADEQUATELY DECONTAMINATED.

WARNING: VOLTAGES IN EXCESS OF 30 VOLTS RMS OR 50 VOLTS DC CAN, IN CERTAIN CIRCUMSTANCES, BE LETHAL. WHEN WORKING ON EQUIPMENT REQUIRING EXPOSURE TO LIVE, UNPROTECTED CONDUCTORS WHERE SUCH VOLTAGES ARE PRESENT, EXTREME CARE MUST BE EXERCISED.

2 Technical Description

The **Alpha Active 4** system comprises of a mattress replacement and pump. The product can be used on hospital and domestic beds in both domestic and care environments. The bed base must be suitable for the specified mattress size.

Alpha Active 4 Pump

The **Alpha Active 4** pump comprises of a moulded case with non slip feet on the base and integral hanging brackets.

The controls are situated on the front of the pump and a sophisticated alarm system differentiates between normal operation and genuine system faults. If an alarm situation is detected an indicator will illuminate on the front of the pump and an audible warning will sound.

Cycle Options

The pump has a user selectable option for operating on either a ten minute, or twenty minute cycle.

10 minutes Cycle

In this alternating mode, the system has a cycle time of 10 minutes. Each full cycle consists of 4.5 minutes inflate, 30 seconds change over, 4.5 minutes deflate and 30 seconds changeover.

20 minutes Cycle

In this alternating mode, the system has a cycle time of 20 minutes. Each full cycle consists of 9.5 minutes inflate, 30 seconds change over, 9.5 minutes deflate and 30 seconds changeover.

Alpha Active 4 Mattress Replacement

Each of the air cells is split into two sections. The base section of each being linked together to provide a static section which provides protection from the effects of bottoming out.

The **Alpha Active 4** cover is water resistant and vapour permeable to enhance patient comfort whilst protecting the cells from ingress of contaminants. The cover is simple to clean in situ, but may easily be removed for laundering, preventing cross contamination.

In the event of cardiac arrest the mattress replacement can be rapidly deflated to allow cardiac resuscitation procedure (CPR) to be performed.

Table 1 - Available Mattress Sizes

Part No.	Description	Spare Cover	Length mm	Width mm	Height mm
648322	ALPHA ACTIVE 4 MR 90	648437	1950 (77")	900(35")	200 (8")
648324	ALPHA ACTIVE 4 MR 85	648461	1950 (77")	850(33")	200 (8")
648326	ALPHA ACTIVE 4 MR 85 PU	648461	1950 (77")	850(33")	200 (8")

3 Pneumatic and Electrical Diagrams

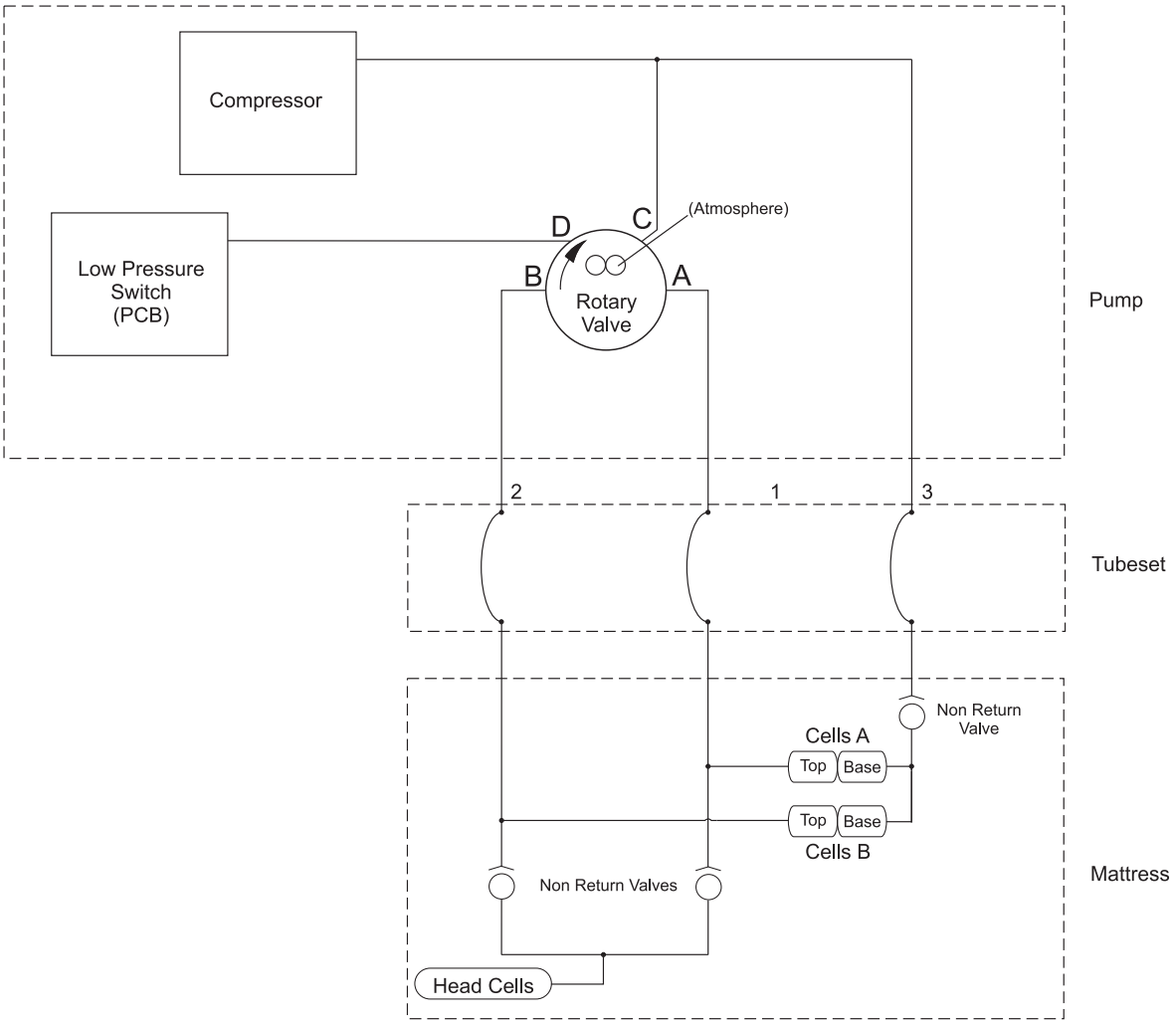
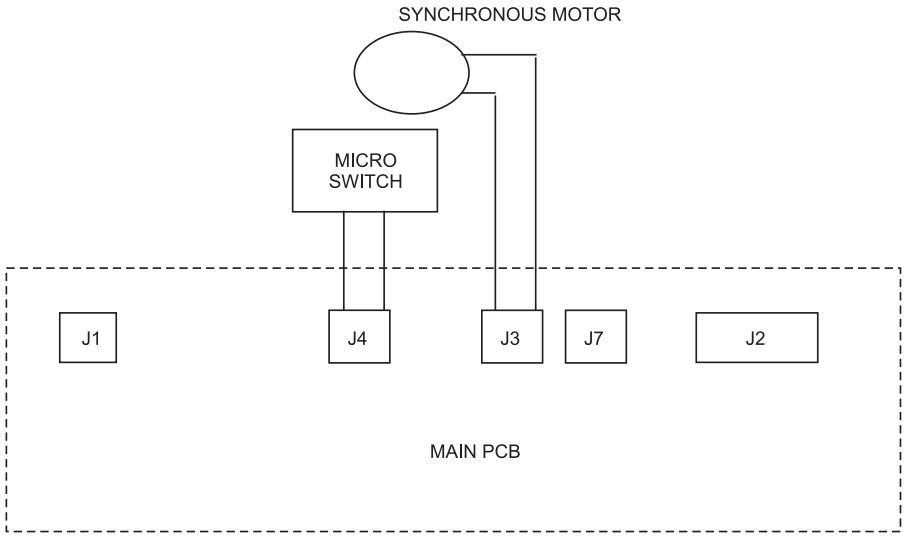
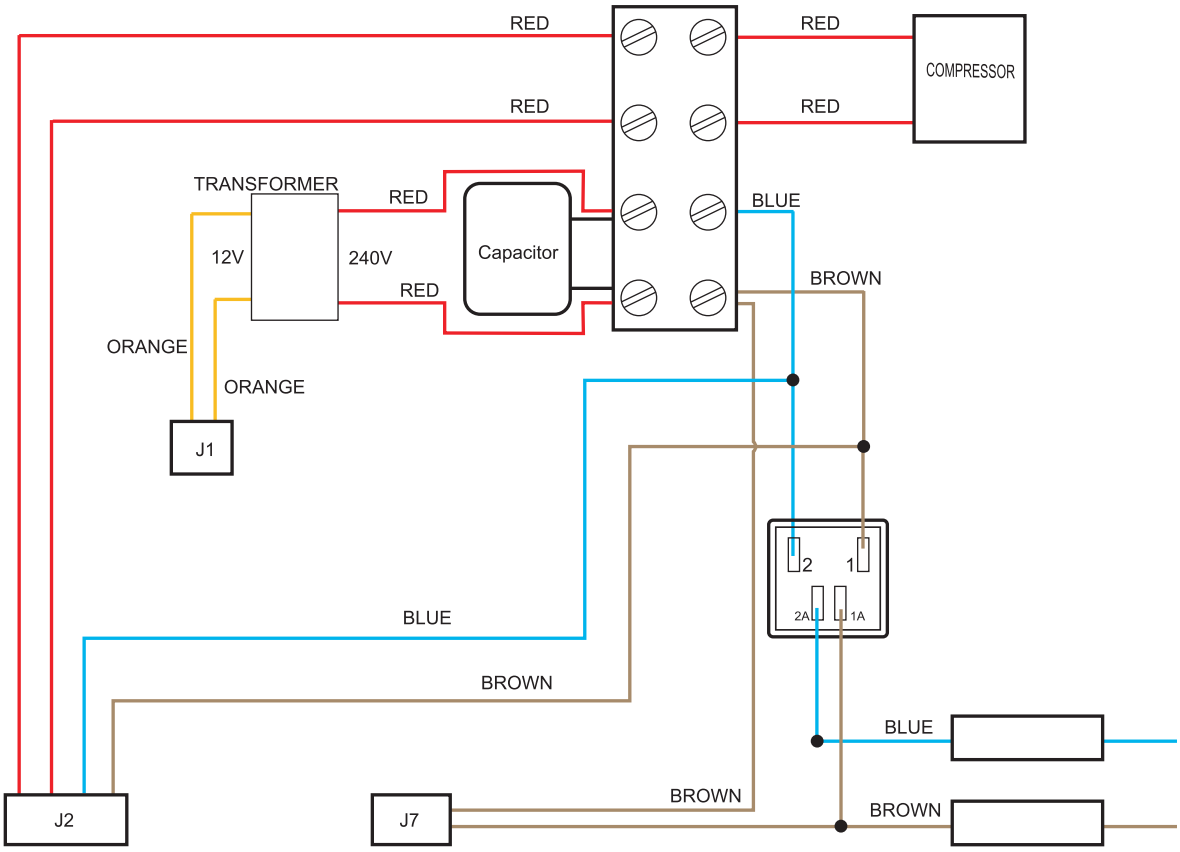


Figure 1 - Pneumatic System Diagram



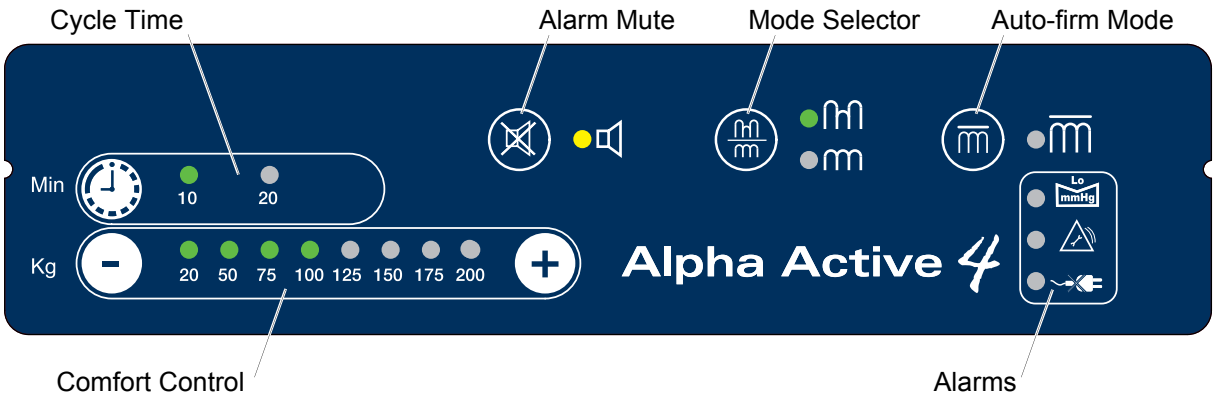


*Connectors J1, J2 and J7 must be connected to their relevant terminals on the Main PCB.

Figure 2 - Electrical Diagram

4 Front Panel

4.1 Below is a diagram of the **Alpha Active 4** pump front panel. For more detail on the function of each button, see below.



5 Controls and Indicators

On/Off Switch

Located on the right side of the pump unit, the On/Off switch will illuminate green when the pump is on.

Alarm/Mute

During an alarm condition the sound of the alarm can be muted by pressing this button. The yellow indicator will then flash intermittently but the alarm will be muted.

Mode Select

The mode selector allows the mode of operation to be selected.

Two modes of operation are available, Alternating or Static (non-alternating). The indicator next to the respective icon indicates the currently selected mode.

Auto-firm Mode

Selects the Auto-firm, non-alternating mode. The orange indicator will illuminate when the pump is in this mode. Autofirm operates for 30 minutes.

Pressure Control

Two buttons (+ and -) are used to set the pressure inside the mattress replacement and therefore the amount of support the patient receives.

The pressure setting is indicated by the green indicator above the selected setting.

Cycle Time

A single button allows the cycle time to be selected for the most appropriate patient therapy.

The cycle time setting is indicated by the green indicator above the selected setting.

6 Alarms and Indicators

Low Pressure Indicator

The red Low Pressure indicator is illuminated whenever the pump detects low pressure within the mattress replacement. An audible alarm will sound unless cancelled by the mute button.

The indicator will extinguish once normal pressure is reached. Refer To “Troubleshooting” on page 14 for possible causes of Low Pressure.

Service Indicator/Pump Fault

The yellow Service/pump fault indicator will illuminate and remain on if the pump has detected an internal fault. An audible alarm will sound unless cancelled by the mute button.

Power Fail Indicator

The red Power Fail indicator will illuminate when a mains power failure has been detected. An audible alarm will sound until power is restored or the pump is switched off using the on/off switch.

CHAPTER 2

TROUBLESHOOTING

1 Troubleshooting Table

The following table contains fault symptoms, their possible causes and suggests steps to rectify the problem. These may occur during initial installation and power up.

Table 2 - Troubleshooting Table

Symptom	Possible Cause	Action
Low Pressure Alarm (Mattress)	Tube-set not connected securely	Check the tube-set connector and ensure it is securely fitted to the pump.
	CPR not fully closed.	Close CPR Unit
	Cell Leak.	Trace and replace faulty part.
Low Pressure Alarm (Pump)	Damaged/Disconnected tube.	Check/Replace.
	Faulty Compressor	Check/Replace. (Chapter 5, Page 13, Section 12).
	Blocked Air Filter	Check/Replace. (Chapter 5, Page 3, Section 2).
Power Fail Alarm	Power has been removed from the pump.	Re-apply power or switch the pump off.
	Blown Fuse.	Check/Replace. (Chapter 5, Page 7, Section 6).
Service Alarm	Pump has detected an internal fault.	Trace and replace faulty part.
	Faulty Microswitch	Test and Replace if required. (Chapter 5, Page 15, Section 14).
	Faulty Gearbox	Check/Replace if required. (Chapter 5, Page 15, Section 18).

CHAPTER 3

MAINTENANCE

WARNING: BEFORE DISMANTLING THE PUMP, ENSURE UNIT HAS BEEN ISOLATED FROM THE POWER SUPPLY BY REMOVING THE CORD PLUG FROM THE WALL OUTLET.

WARNING: A POTENTIAL ELECTRICAL SHOCK HAZARD EXISTS WHEN THE BACK COVER IS REMOVED, EVEN WITH THE PUMP SWITCHED OFF.

CAUTION: Static Sensitive Devices
This pump should only be opened by personnel trained in ESD methods and with appropriate equipment and anti-static protection.

1 Pump Service

A pump should be serviced every 12 months. To carry out a service on the pump, do the following:

1.1 Carry out the Pump Maintenance Checks (Refer to Page 1, Section 2).

1.2 Replace the air inlet filter.

2 Pump Maintenance Checks

If any parts are found to be damaged they must be replaced in accordance with Pump Repair.

2.1 Visually inspect the following for damage, wear and potential faults:

• Base of Pump	Check base is free from debris.
• Inlet Filter	Check condition.
• Compressor	Check compressor seating.
• Electrical Connections	Check connections are secure and completely insulated.
• Tubing	Check completely pushed on and are kink free.
• Power Switch	Check switch illuminates when ON.
• Wiring	Check wiring is intact. Check electrical insulation are not damaged.
• Air flow	Check air flow is alternating.
• Outlet Tubes	Check tubes are secure.

3 Mattress Service

To carry out a service on the mattress, do the following:

3.1 Carry out the Mattress Maintenance Checks (Refer to Page 2, Section 4).

4 Mattress Maintenance Checks

If any parts are found to be damaged they must be replaced in accordance with Mattress Repair.

4.1 Visually inspect the following for damage, wear and potential faults:

• Base and Top Cover	Check for tears, staining, clarity of printed labels.
• Base/Top cover Zip	Check the zip runs freely and condition of zip teeth.
• Fixing Straps	Check condition and security.
• Connectors	Check for damage and security.
• Tubing	Check for security and ensure no kinks or twists.
• Cells	Check for damage.
• Manifold	Check for damage and security.
• Press Studs	Check condition.
• CPR	Check operation of Fast Deflate mechanism.
• Tubeset Assembly	Check for damage and security of connection.

4.2 Carry out a function test on the pump/mattress system in accordance with Chapter 4.

5 Alarm Functions

Power Fail Alarm

Switch pump off at mains/power socket, leaving the pump switched on. The red power fail indicator will illuminate when a mains power failure has been detected. An audible alarm will sound until power is resumed or the pump is switched off using the on/off button.

Low Pressure Indicator

5.1 Block the air outlets on the pump.

5.2 Switch the pump on and allow Low Pressure indicator to extinguish.

5.3 Remove the blockage from the air outlets. The red Low Pressure indicator will illuminate and and audible alarm will sound.

Service Pump/Fault

The yellow service/pump fault indicator will illuminate and remain on if the pump has detected an internal fault. Refer to Troubleshooting to help diagnose the fault, refer to Chapter 2.

CHAPTER 4

TESTING

CAUTION: Electrostatic discharge can seriously damage the Main PCB. Prior to replacing it, adequate earthing precautions must be taken.

Note: *In all cases the pump and mattress must be tested together as a system.*

1 Mattress Visual Inspection

Ensure that the mattress is checked as follows:

1.1 All studs must be secure and all inlet connectors fitted securely.

1.2 The mattress contains 19 cells which are studded to both sides of the mattress. The bottom of each cell connected to the static feed, the top half connected to the alternating feed (the head section cells top half are connected to the static feed). Ensure that the cells are retained centrally by the loops in the base cover.

2 Pump Visual Inspection

2.1 Ensure there are no cracks or marks on the pump case. Ensure the labels are intact and readable. Check there are no marks or fractures in the Pump outlet module.

2.2 Ensure the mains lead is fully secure and there are no cuts or damage to the cable.

3 Pump Flow, Pressure, and Function Test

You will also need:

- A sphygmomanometer or pressure gauge (0-160mmHg)
- A flow meter (0-10 litres/minute)

To carry out a system functional test complete the following procedures:

- Flow and Pressure Checks
- Electrical Testing
- Functional Test

The following procedures must be carried out after a service or major repair of the pump. To test/ calibrate pump correctly, the following equipment (or equivalent) is required:

Note: *All test equipment must be calibrated to national or international standards.*

Flow and Pressure Checks

3.1 Set the pressure control on the pump to maximum (200kg) setting.

3.2 Connect a dual flow pressure meter, via a valve, to whichever outlet is working.

3.3 Open the valve fully. The free flow rate should not be less than specified in the table below.

Air Flow @ 20mmHg	Air Flow @ 50mmHg
6 litres/min	3 litres/min

3.4 Close the valve and operate the pressure control on the pump from minimum (20kg) to maximum (200kg) setting. The pressure indicated on the gauge (in mmHg) should be as specified in the table below.

Minimum Pressure @ 20kg	Maximum Pressure @ 200kg
25mmHg ± 5mmHg	75mmHg ± 5mmHg

3.5 Repeat for the remaining ports.

4 Electrical Testing

To test and calibrate the pump unit correctly, the following equipment is required:

Item	Test Equipment
1	Insulation Resistance Tester (Megger), 500 Vdc
2	Portable Appliance Tester
3	Multimeter / Continuity Tester
4	Dielectric strength tester (Flash tester) 3.0 kVac with current limit (CHECK 4.0kVac??)

Electrical Safety Checks - Class II

There are several electrical safety checks that must be carried out after breakdown repairs, rental re-checks and servicing. Where alternatives are given, the test will depend upon the available equipment. The tests are as follows:

- Insulation Resistance Test (Megger Test) or
- Dielectric Strength (Flash Test)

Insulation Resistance Test

This test checks the integrity of the appliance's insulation.

For all appliances, this test is applied between the connected Live and Neutral wires and the appliance's metal compressor assembly box.

Specification: 500 Vdc is applied to the insulation and the measured resistance must be greater than 2MΩ. This test can be conducted by using a Portable Appliiance Tester. Also check the continuity of the mains cable.

Dielectric Strength Test (Flash Test)

This test shows the response of the insulation to high ac-voltage stress, to the efforts of the capacitive current and gives an early warning of any electrical problems developing in the appliance.

WARNING: DANGER OF ELECTRIC SHOCK. DO NOT TOUCH ANY EXPOSED PARTS WHILE CONDUCTING THIS TEST. DO NOT TOUCH ANY PART OF YOUR BODY WITH THE CONTACTS OF THE PROBES.

WARNING: THIS EQUIPMENT SHOULD NOT BE USED IF YOU HAVE A HEARING AID OR PACEMAKER FITTED, DUE TO THE POSSIBILITY OF ELECTROMAGNETIC DISTURBANCE.

Specification: 4.0 kVac is applied between the connected Live and Neutral wires and the foil applied to the device's enclosure. No breakdown should occur.

Note: *The voltage levels used for this test, may stress and weaken the insulation. This test is therefore not recommended as a routine test. It should only be used after a major assembly/disassembly has been carried out.*

Functional Test

Tests must be carried out using a 220-240V 50Hz power supply.

Test Setup and Initial Switch On

4.1 Set the pressure control to minimum (20kg) and ensure that all three outlet ports are open to atmosphere.

4.2 Connect the mains/power cable to a suitable power socket outlet and then set the on/off switch to ‘on’. Verify that the green indicator in the switch is illuminated. Verify that the red **LOW PRESSURE** indicator is illuminated. Use the fingers or flowtron stopper (part number CAS077) to close all three ports and verify that the **LOW PRESSURE** indicator goes off.

Power Fail Alarm Check

4.3 With the pump operating, disconnect the power supply at the power socket outlet. Verify that, within 5 seconds, the red **POWER FAIL** indicator flashes in conjunction with an audible alarm. Reconnect the power supply. Verify the **POWER FAIL** indicator is extinguished.

Low Pressure Alarm Check

4.4 Close all three ports. Operate the on/off switch to ‘on’. verify that, after 10 seconds, the **SOLID LOW PRESSURE** indicator is extinguished.

4.5 Open all ports to atmosphere. Verify that, after 10 seconds, the red **LOW PRESSURE** indicator flashes in conjunction with the audible alarm.

Service Alarm Check

To check the operation of the Service alarm it is necessary to have the case halves open.

WARNING: ENSURE PUMP IS DISCONNECTED FROM THE POWER SUPPLY.

4.6 Open the case halves (Refer to Chapter 5, Page 9, Section 8).

4.7 Disconnect the micro switch from the PCB connector, J4 (Chapter 1, Page 4, Section 2).

4.8 Close the case halves.

4.9 Connect the mains/power cable to a suitable power socket outlet and close all three ports. Operate the on/off switch to ‘on’.

4.10 The service indicator should operate within 10 seconds.

4.11 Operate the on/off switch to ‘off’ position, disconnect the power supply at the power socket outlet.

4.12 Open the case halves and reconnect the micro switch to the PCB connector, J4. (Chapter 1, Page 4, Section 2).

4.13 Close the case halves (Refer to Chapter 5, Page 9, Section 8).

4.14 Connect the mains/power cable to a suitable power socket outlet and close both ports. Operate the on/off switch to ‘on’.

4.15 The service indicator should be extinguished.

5 Mattress Inflation Test

5.1 Test the complete system to ensure correct operation.

6 End Setting

6.1 Disconnect the mattress from the pump and coil up the mains cable. Expel all the air from the mattress. The system is now ready to be packed.

CHAPTER 5

PUMP REPAIR

WARNING: BEFORE DISMANTLING THE PUMP, ENSURE UNIT HAS BEEN ISOLATED FROM THE POWER SUPPLY BY REMOVING THE CORD PLUG FROM THE WALL OUTLET.

1 General

This chapter details repair procedures for the **Alpha Active 4 Pump Unit**. All repairs should be carried out by ArjoHuntleigh approved service personnel.

If any cable ties are cut so as to enable removal of parts, replacement ties must be fitted as part of the install procedure.

Table 3 defines the test requirements which must be carried out following certain repairs:

To carry out a flow, pressure and function test on the pump refer to Chapter 4, Page 1, Section 3.

To carry out the electrical tests on the pump refer to Chapter 4, Page 2, Section 4.

Table 3 - Repair to Testing Requirements

Components / Assemblies	Function Test	Electrical Safety Tests
Front Casing	Yes	Yes
Rear Casing	No	Yes
Display PCB	Yes	Yes
Main PCB	Yes	Yes
Bed Hooks	No	Yes
Compressor	Yes	Yes
Rotor/Stator Assembly	Yes	Yes
Mains Lead	No	Yes
Mains Switch	No	Yes
Terminal Block	No	Yes
Transformer	No	Yes
Air Filter	Yes	Yes
Oulet Connector	Yes	Yes

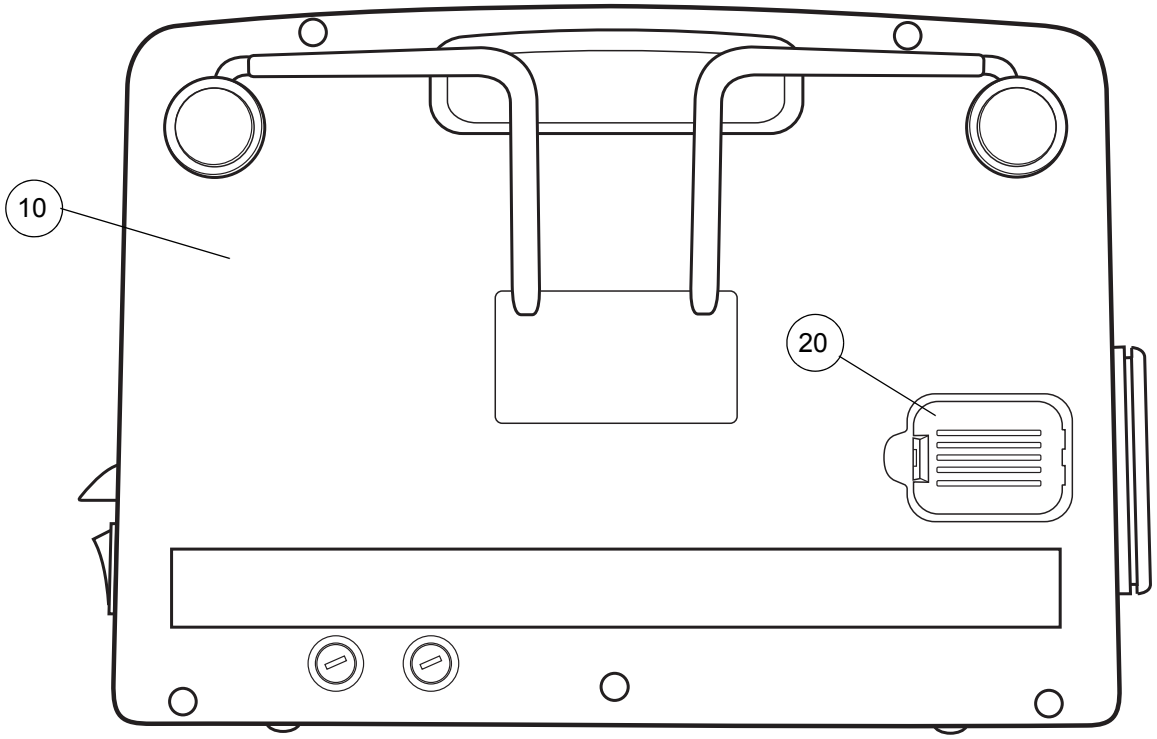


Figure 3 - Replace the Air Filter

Table 4 - Replace the Air Filter Parts List

Item	Part Number	Description	Qty
10	648402	Rear Case Alpha Active 3 and 4	1
20	648405	Air Filter Cover	1
-	648404	Air Filter Replacement	1

2 Removing the Air Filter

2.1 Place the pump unit face down on a clean, flat surface.

2.2 Press firmly on the retaining clip of the air filter housing, and lift the Air Filter housing (Fig 3, Item 20) away.

2.3 Carefully lever out the the Air Filter from the housing (Fig 3, Item 20).

3 Replacing the Air Filter

3.1 Place the new air filter in the air filter housing (Fig 3, Item 20).

3.2 Place the air filter housing (Fig 3, Item 20) into the rear case (Fig 3, Item 10) by ensuring that the two securing lugs align with the holes provided.

3.3 Carefully press down on the air filter housing retaining clip and ensure it the housing has been securely fitted into the rear case (you should hear a ‘CLICK’ confirming proper fitment).

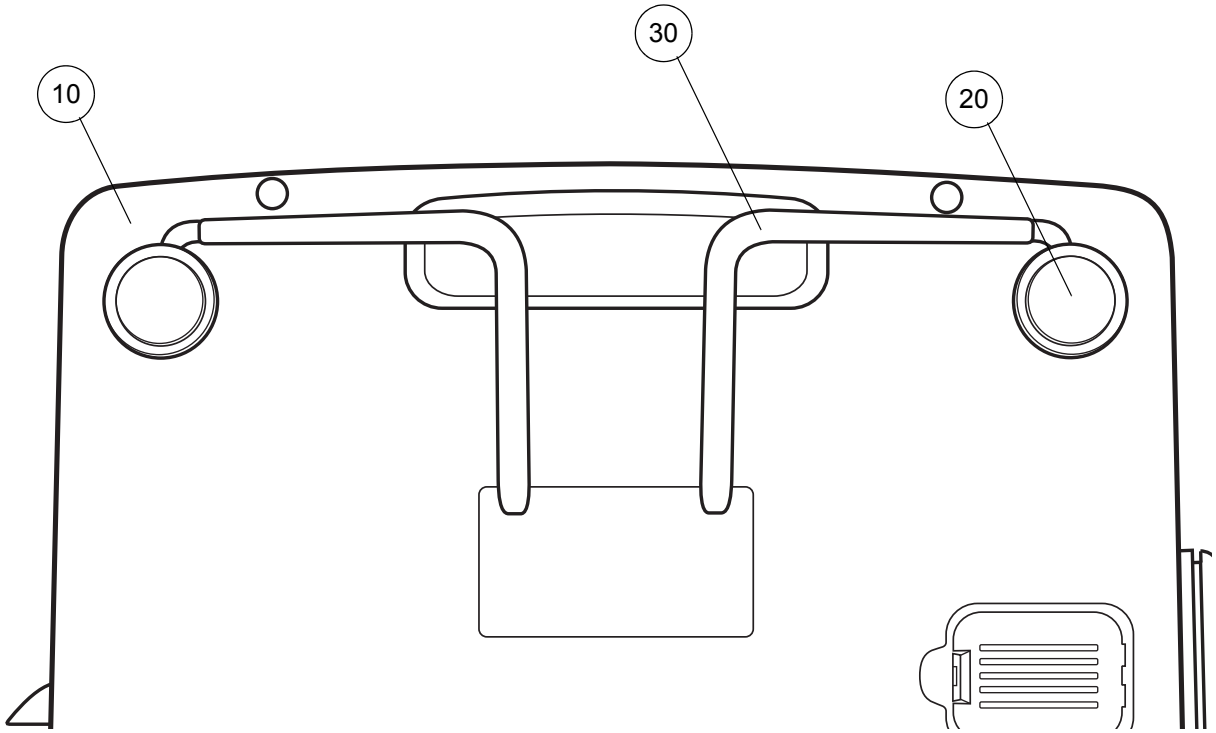


Figure 4 - Replacement of Bed Hooks

Table 5 - Bed Hook Parts List

Item	Part Number	Description	Qty
10	648402	Rear Case Alpha Active 3 and 4	1
20	REF	Bed Hook Cover	2
30	648403	Bed Hook Alpha Active 3 and 4	2

4 Removing The Bed Hooks

4.1 Place the pump unit face down on a clean, flat surface.

4.2 Ensure the Bed Hook is folded against the pump.

4.3 Using a small flat tool, remove the Bed Hook Cover by inserting the tool into the aperture on the top edge of the cover.

4.4 Remove the two securing screws from the Bed Hook Bracket.

Note: *You may be required to gently lever the bracket away from the pump in order to fully remove it. If so, do this via the top edge of the recess, and ensure you place a free hand over the bracket to prevent its loss.*

4.5 Rotate the hook 90° and remove from the pump casing.

4.6 Repeat Para 4.2 to Para 4.5 for the other Hook.

5 Replacing the Bed Hooks

5.1 Firmly insert the new Hook (Fig 4, Item 30) at 90° to the pump case, into the corresponding recess.

5.2 Whilst applying pressure to the hook, rotate it so it is folded in against the pump.

5.3 Position the Bed Hook Bracket and fit the two retaining screws.

5.4 To refit the Bed Hook Cover.

5.4.1 Clean all previous glue residue off from both the cover and the recess lip.

5.4.2 Apply an instant adhesive (Loctite 460 or similar) to the lip within the recess of the pump case.

5.4.3 Firmly press the Bed Hook cover into position.

5.5 Repeat for the other Hook.

5.6 Assemble the case (Refer to Page 9, Section 9).

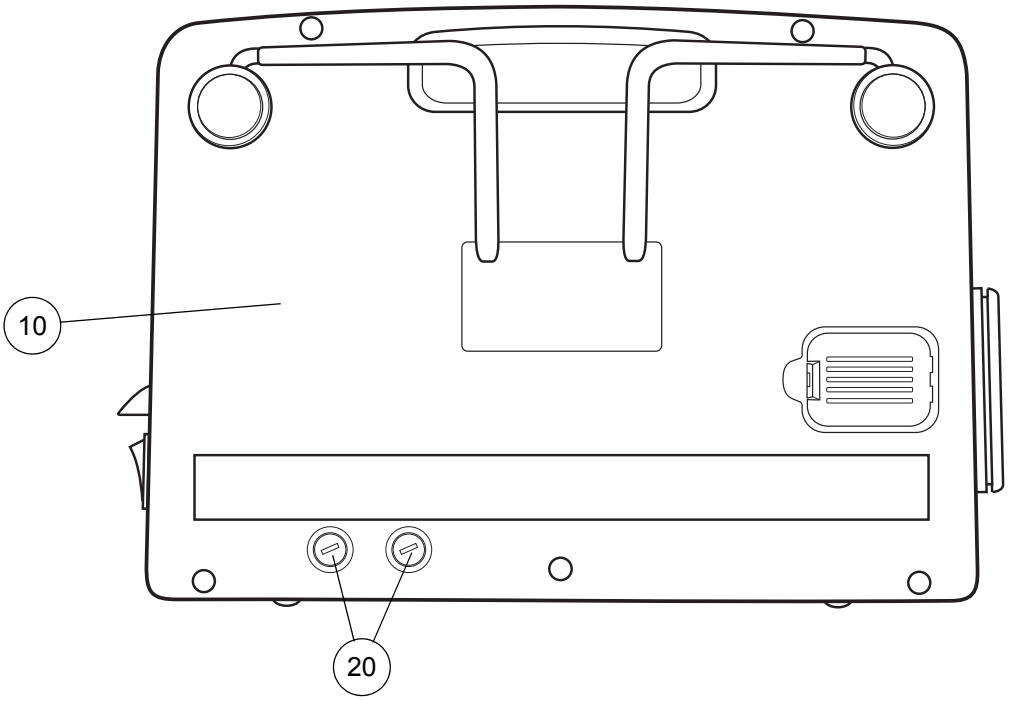


Figure 5 - Position of Mains/Power Fuses

Table 6 - Mains/Power Fuses Parts List

Item	Part Number	Description	Qty
10	648402	Rear Case	1
20	MIS106	Mains Fuse (1A Time Lag T Fuse)	2

6 Removing the Mains/Power Fuses

WARNING: BEFORE DISMANTLING THE PUMP, ENSURE UNIT HAS BEEN ISOLATED FROM THE POWER SUPPLY BY REMOVING THE CORD PLUG FROM THE WALL OUTLET.

6.1 Place the pump unit face down on a clean, flat surface.

6.2 Using a flatbladed screwdriver, remove the fuse holder from the back of the rear case by unscrewing anti-clockwise.

6.3 Pull the blown fuse from its holder.

7 Installing the Mains/Power Fuses

7.1 Firmly push the new fuse into its holder.

7.2 Place the fuse holder into position on the back of the rear case.

7.3 Using a flatbladed screwdriver tighten clockwise until tight.

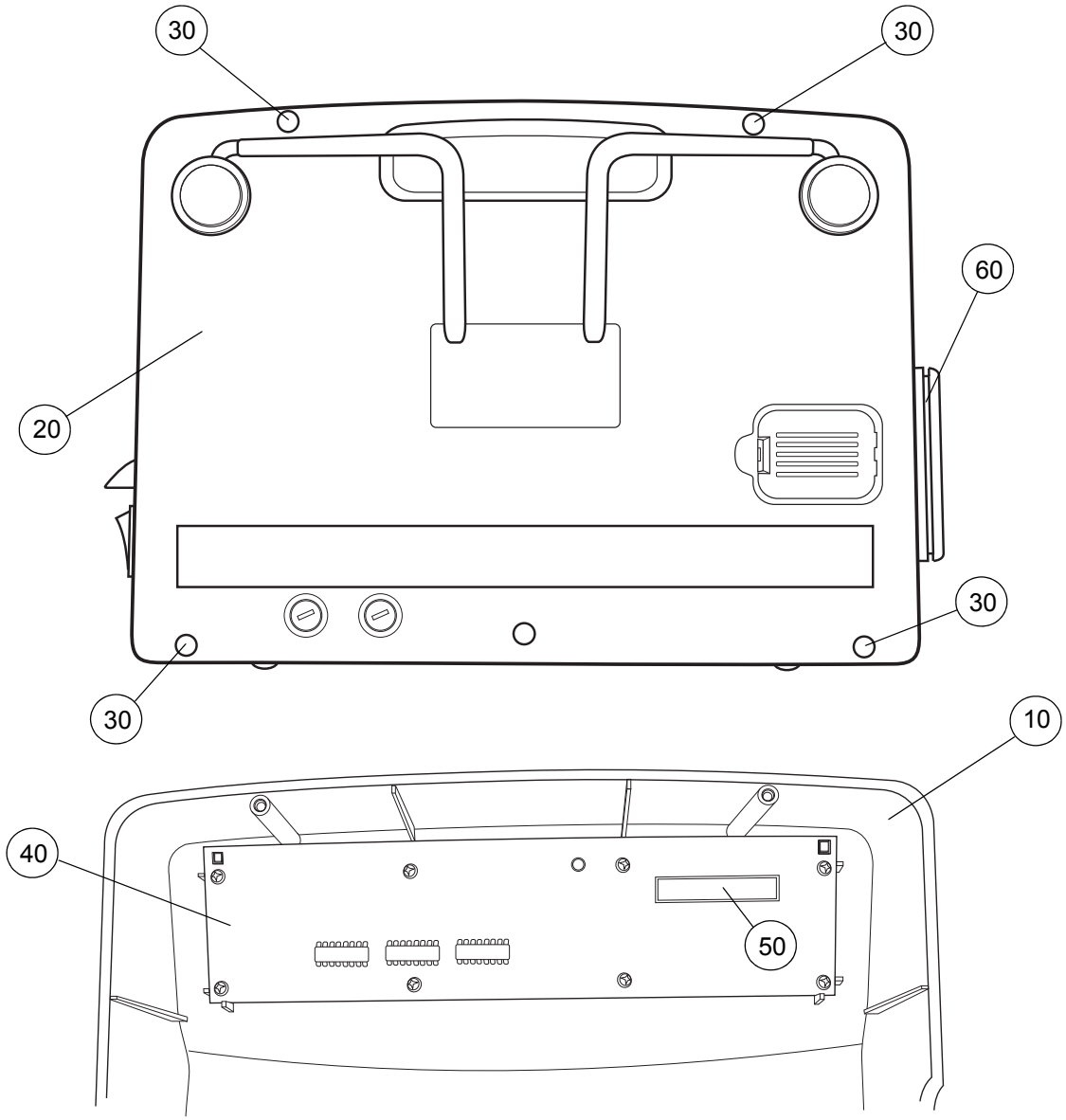


Figure 6 - Front Case Removal/Fitment

Table 7 - Case Assembly

Item	Part Number	Description	Qty
10	648401	Front Case Alpha Active 4	1
20	648402	Rear Case Alpha Active 3 and 4	1
30	REF	Screw (M3x15mm Pozi Pan Head, PT Type)	5
40	648420	Display PCB Alpha Active 4	1
50	REF	Main PCB - Display PCB Ribbon Connector	1
60	648423	Hose Connector - Alpha Active 4	1

8 Removing the Front Case

WARNING: BEFORE DISMANTLING THE PUMP, ENSURE UNIT HAS BEEN ISOLATED FROM THE POWER SUPPLY BY REMOVING THE CORD PLUG FROM THE WALL OUTLET.

8.1 Place the pump unit face down on a clean, flat surface.

8.2 Unscrew the five screws (Fig 6, Item 30).

8.3 Carefully turn the pump over, collecting the five screws (Fig 6, Item 30), keeping them in a safe place.

8.4 Carefully pull apart the two cases, ensuring the compressor remains in the rear case.

Note: *The front case contains a PCB connected via a ribbon to the main PCB in the rear case.*

8.5 Within the front case, on the Display PCB pull apart the two ribbon securing clips.

8.6 Remove the ribbon from the Display PCB.

8.7 The front case is now removed.

9 Replacing the Front Case

9.1 Place the pump rear case (Fig 6, Item 20) on a flat surface with the inner components facing upward.

9.2 Plug the Main PCB - Display PCB ribbon cable into the rear of the display PCB ribbon connector (Fig 6, Item 50) within the front case.

9.3 Using thumbs carefully push down on the ribbon connector until the two securing clips ‘click’ into place over it.

9.4 Place the front case (Fig 6, Item 10) on top of the rear case (Fig 6, Item 20) ensuring that no wires are trapped.

9.5 Carefully turn the pump over so the front is face down. Install the five screws (Fig 6, Item 30) to the rear case and tighten.

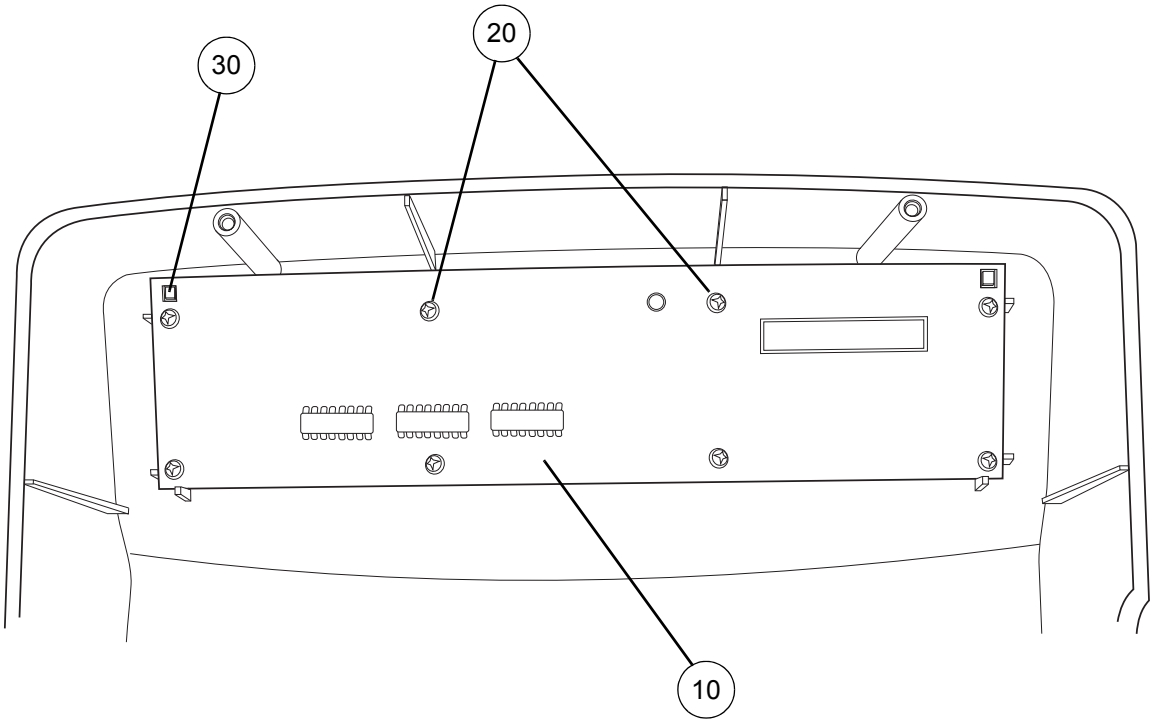


Figure 7 - Replacing Display PCB

Table 8 - Display PCB Parts List

Item	Part Number	Description	Qty
10	648420	Display PCB	1
20	REF	Screw (M3x8mm Pozi Pan Head, PT Type)	8
30	REF	Location Lug	-

10 Removing the Display PCB

10.1 Remove the Front case (Refer to Page 9, Section 8).

10.2 Remove the eight fixing screws (Fig 7, Item 20) from the display PCB.

10.3 Carefully lift the Display PCB (Fig 7, Item 10) out of the front casing.

11 Installing the Display PCB

11.1 Insert the base of the Display PCB (Fig 7, Item 10) into position within the front casing, guiding the square holes on the PCB to the location lugs (Fig 7, Item 30) within the front case.

11.2 Refit the eight fixing screws (Fig 7, Item 20).

11.3 Replace the Front case (Refer to Page 9, Section 9).

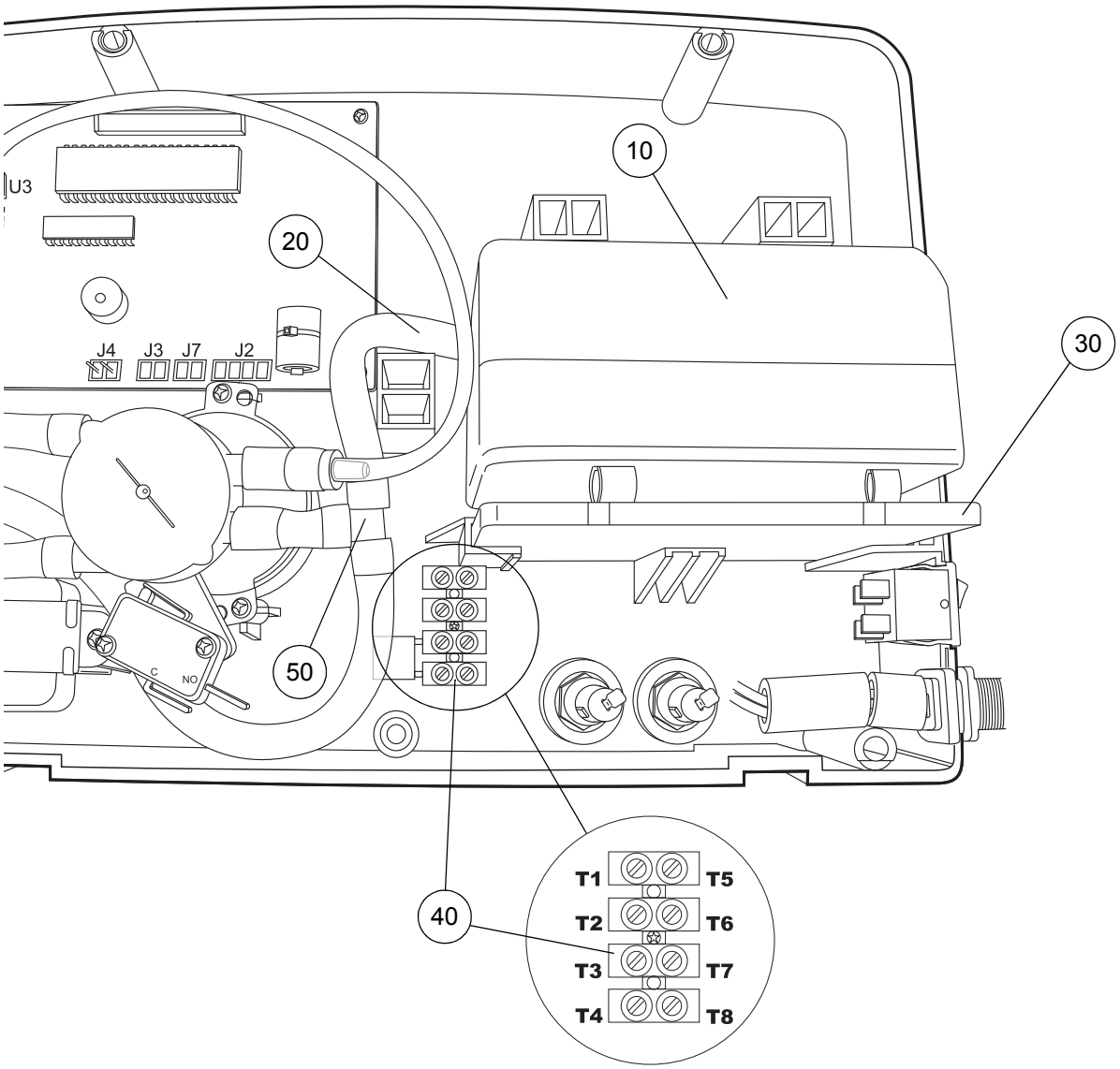


Figure 8 - Compressor Fitment/Removal

Table 9 - Compressor Assembly

Item	Part Number	Description	Qty
10	648408	Compressor	1
20	REF	Compressor Outlet	-
30	REF	Compressor Mounting Plate	-
40	648425	Terminal Block	1
50	REF	T-Piece Connector	1

12 Removing the Compressor Assembly

12.1 Remove the front case (Refer to Page 9, Section 8).

12.2 Remove the two red wires from the Terminal Block terminals T5 and T6.

12.3 Pull these wires free from other wiring within the rear case, noting the routing of the wires.

12.4 Remove the Compessor air outlet feed (Fig 8, Item 20) from the compressor (Fig 8, Item 10).

12.5 Lift the compressor assembly (Fig 8, Item 10) away.

13 Installing the Compressor Assembly

13.1 Place the compressor assembly into the rear case, ensuring the mounting plate (Fig 8, Item 30) sits in its moulding within the case.

13.2 Replace the compressor air feed (Fig 8, Item 20) to the new compressor (Fig 8, Item 10).

13.3 Route the compressor wires as required and connect to the appropriate terminals on the Terminal Block.

13.4 Reassemble the case (Refer to Page 9, Section 9).

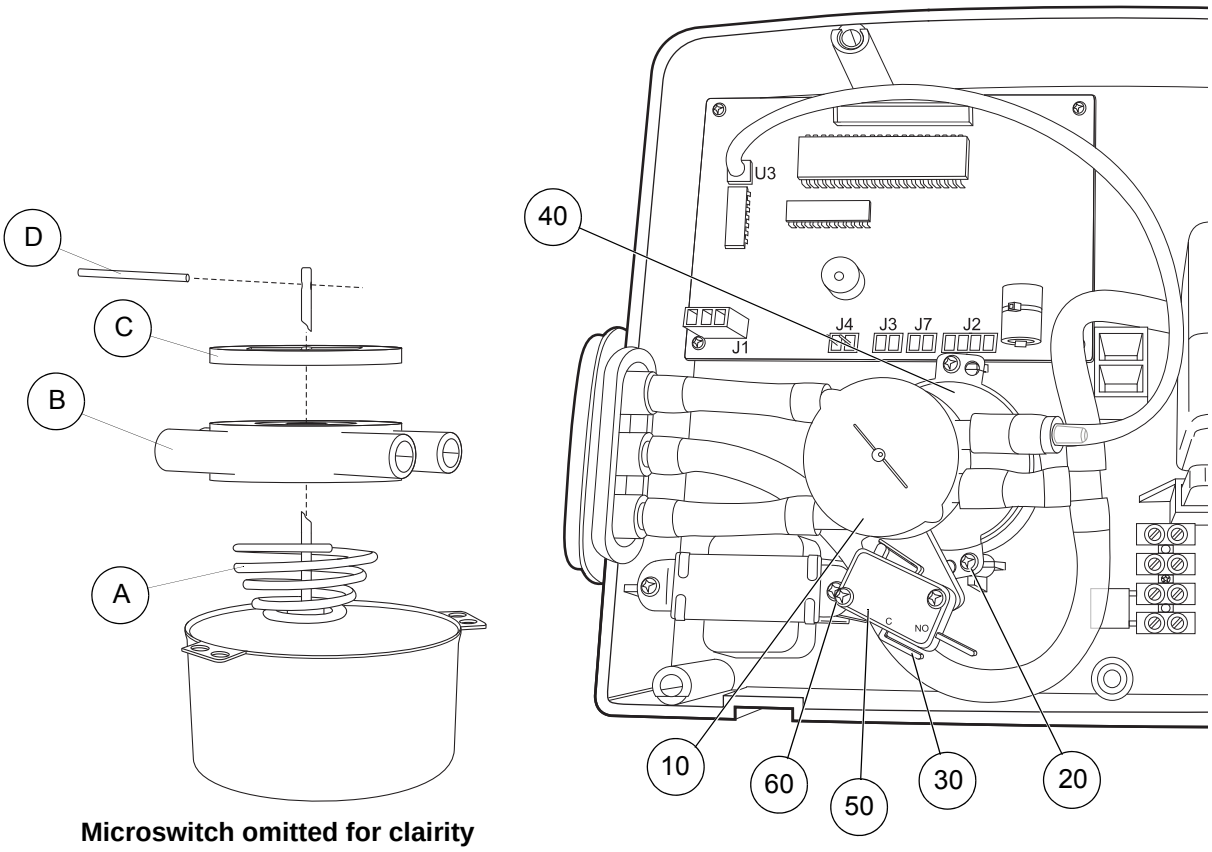


Figure 9 - Removing the Rotor/Stator Assembly

Table 10 - Rotor/Stator Assembly

Item	Part Number	Description	Qty
10	648422	Rotor/Stator Alpha Active 4	1
20	REF	Screw (M3x10mm Pozi Pan Head, PT Type)	2
30	REF	Rotor/Stator Spade Connectors	-
40	648427	Gearbox Assembly	1
50	648417	Microswitch	1
60	REF	Microswitch Securing Screw (M3x15mm Pozi Pan Head, PT Type)	2

14 Removing the Microswitch Assembly

14.1 Remove the front case (Refer to Page 9, Section 8).

14.2 Remove the two spade connectors from the Rotor/Stator microswitch, noting wires/connections.

14.3 Remove the two securing screws (Fig 9, Item 60) that hold the microswitch in place.

14.4 You can now remove the Microswtich (Fig 9, Item 50).

15 Installing the Microswitch Assembly

15.1 Place the microswitch (Fig 9, Item 50) into position and secure with the two securing screws.

15.2 Re-connect the two spade connectors to the microswitch.

15.3 Re-fit the front case (Refer to Page 9, Section 9).

16 Removing the Rotor/Stator Assembly

16.1 Remove the front case (Refer to Page 9, Section 8).

16.2 Remove the four tubing connections to the Rotor/Stator, noting their connection locations.

16.3 Remove the two spade connectors from the Rotor/Stator microswitch, noting wires/connections.

16.4 Push down on the Rotor/Stator assembly Fig 9, Item 10, and remove the securing pin (D).

16.5 Remove the complete rotor/stator assembly (C,B,A) from the top of the gearbox.

17 Installing the Rotor/Stator Assembly

17.1 Refering to Figure 9:

17.1.1 Place the spring (A) onto the gearbox spindle as shown.

17.1.2 Place the bottom of the Rotor/Stator (B) onto the gearbox spindle.

17.1.3 Pushing down on the bottom section of the Rotor/Stator, place the top half of the Rotor/Stator (C) onto the gearbox spindle AND while applying pressure, slide the securing pin (D) through the spindle as shown.

17.1.4 Ensure the securing pin (D) is seated within the recess on the top of the rotor/stator assembly.

17.2 Re-connect the two spade connectors to the Rotor/Stator microswitch.

17.3 Connect the four tubing connections to the Rotor/Stator.

17.4 Re-fit the front case (Refer to Page 9, Section 9).

18 Removing the Gearbox Assembly

18.1 Remove the rotor/stator assembly (Refer to Page 15, Section 16).

18.2 Remove the two securing screws (Fig 9, Item 20).

18.3 Remove the Gearbox-PCB connector from J3 on the Main PCB.

18.4 You can now remove the Gearbox Assembly (Fig 9, Item 40).

19 Installing the Gearbox Assembly

19.1 Place Gearbox assembly (Fig 9, Item 40) into position in the rear case, ensuring the wires exit the Gearbox in the direction of the compressor.

19.2 Secure with the two securing screws (Fig 9, Item 20).

19.3 Refer to “Installing the Rotor/Stator Assembly”.

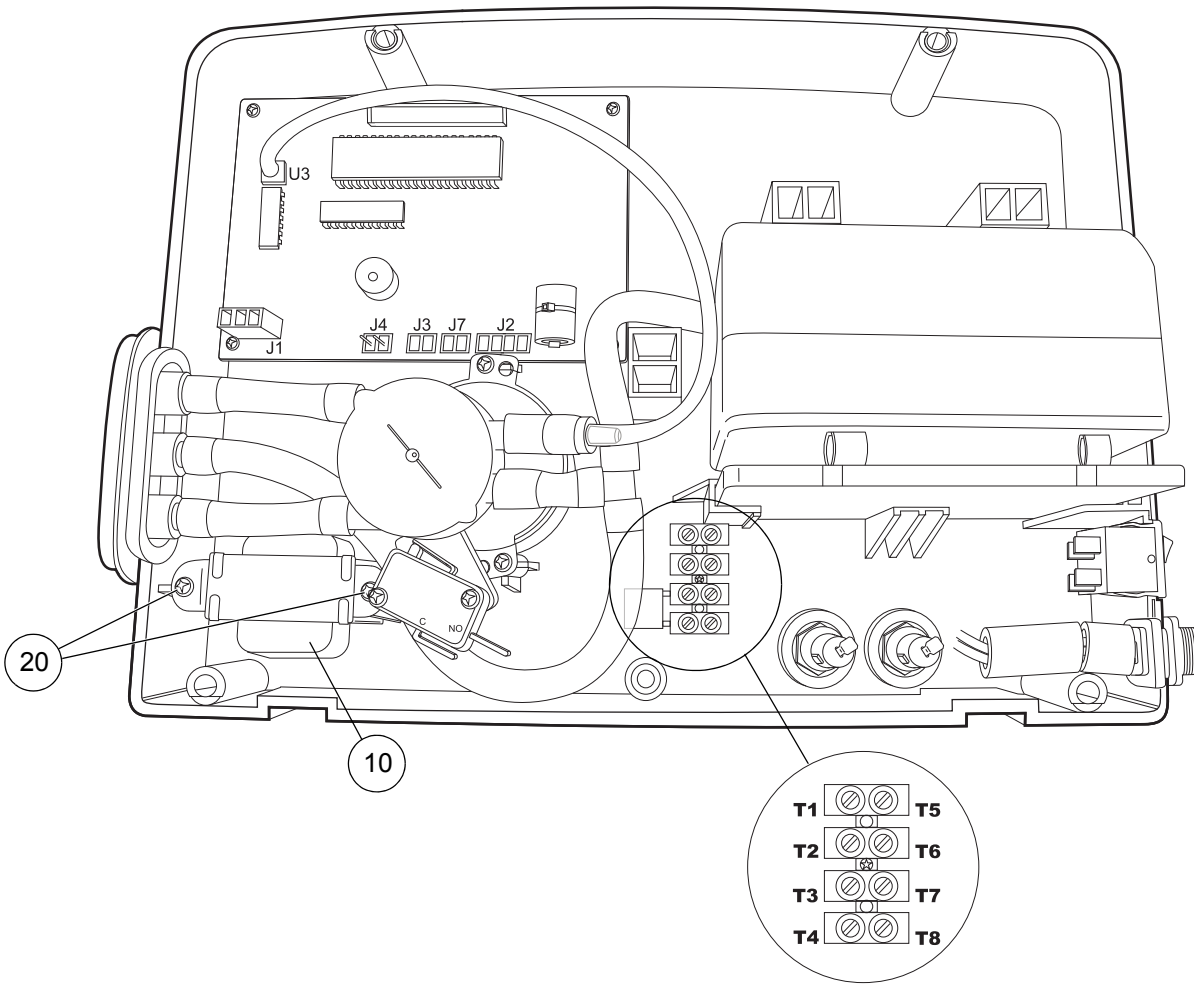


Figure 10 - Removing the Transformer

Table 11 - Transformer

Item	Part Number	Description	Qty
10	648429	Transformer Alpha Active 4	1
20	REF	Screw (M3x10mm Pozi Pan Head, PT Type)	2

20 Removing the Transformer

20.1 Remove the front case (Refer to Page 9, Section 8).

20.2 On the main PCB, disconnect the transformer connection from J1.

20.3 Remove the red wires from Terminals T3 and T4 on the Terminal Block.

Note: *Ensure the capacitor remains connected to Terminals T3 and T4.*

20.4 Remove the two securing screws (Fig 10, Item 20) that hold the transformer (Fig 10, Item 10) in place.

20.5 You can now remove the transformer (Fig 10, Item 10).

21 Installing the Transformer

21.1 Place the transformer (Fig 10, Item 10) into position in the rear case, ensuring it is correctly seated and orientation is so that the Main PCB wires are in the direction of the PCB.

21.2 Fit the two securing screws (Fig 10, Item 20).

21.3 Re-connect the red wires to Terminals T3 and T4 on the Terminal Block.

Note: *Ensure red wires run under all tubing, and that the capacitor remains connected to Terminals T3 and T4.*

21.4 Re-connect the transformer connection to the Main PCB J1.

21.5 Re-fit the front case (Refer to Page 9, Section 9).

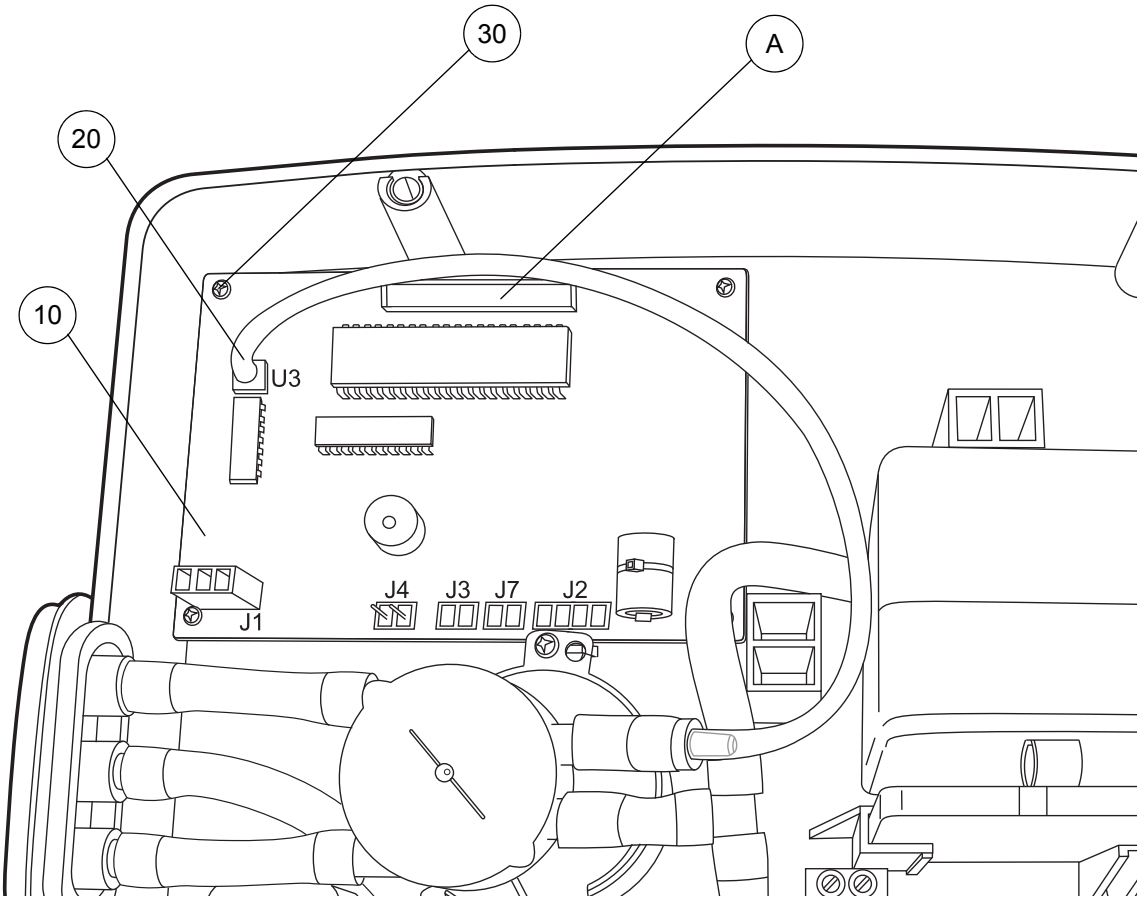


Figure 11 - Removing the Main PCB

Table 12 - Main PCB Parts List

Item	Part Number	Description	Qty
10	648421	Main PCB Alpha Active 4	1
20	REF	Stator To Pressure Switch Tubing	1
30	REF	Screw (M3x8mm Pozi Pan Head, PT Type)	4

22 Removing the Main PCB

22.1 Remove the front case (Refer to Page 9, Section 8).

22.2 On the Main PCB (Fig 11, Item 10), pull apart the two ribbon securing clips, at connector ‘A’.

22.3 Remove the ribbon cable from the Main PCB (Fig 11, Item 10).

22.4 On the main PCB, disconnect:

22.4.1 The transformer connection from J1.

22.4.2 The Rotor/Stator microswitch cable from J4.

22.4.3 The Rotor/Stator cable from J3.

22.4.4 The twin live connector from J7.

22.4.5 The 4-way connector from J2.

22.4.6 The Rotor/Stator tubing (Fig 11, Item 20) from U3.

22.5 Remove the four corner fixing screws (Fig 11, Item 30) and lift the Main PCB (Fig 11, Item 10) out of the pump case.

23 Replacing the Main PCB

23.1 Place the Main PCB with its component side facing upward, into position in the rear case, ensuring alignment of the four corner fixing holes in Main PCB (Fig 11, Item 10) with the pillars in the rear case. Fit the four retaining screws (Fig 11, Item 30).

23.2 Connect to the Main PCB:

23.2.1 The Rotor/Stator tubing to U3.

23.2.2 The 4-way connector to J2.

23.2.3 The twin live connector to J7.

23.2.4 The Rotor/Stator cable to J3.

23.2.5 The Rotor/Stator microswitch cable to J4.

23.2.6 The transformer connection to J1.

23.3 Plug the ribbon cable into the connector on the Main PCB within the rear case.

Note: *If Main PCB - Display PCB ribbon cable has been disconnected from both the PCB’s, ensure upon re-connecting that the location keys are in correct orientation.*

23.4 Using thumbs, carefully push down on the ribbon connector until the two securing clips ‘click’ into place over it.

23.5 Re-fit the front case (Refer to Page 9, Section 9).

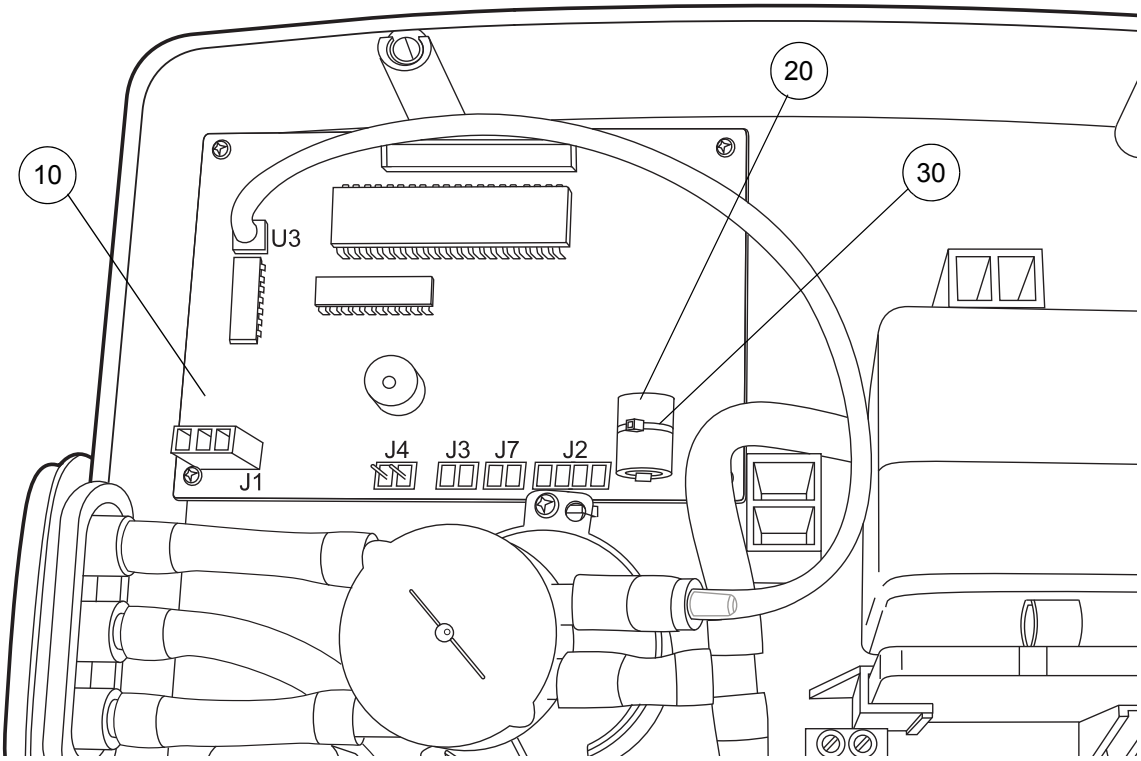


Figure 12 - Removing the Power Fail Battery

Table 13 - Power Fail Battery Parts List

Item	Part Number	Description	Qty
10	648421	Main PCB Alpha Active 4	1
20	648428	Battery	1
30	BP196	Cable Tie	1

24 Removing Power Fail Battery

24.1 Remove the front case (Refer to Page 9, Section 8).

24.2 Remove the Main PCB (Refer to Page 19, Section 22).

24.3 De-solder the battery connections from the PCB.

25 Replacing Power Fail Battery

25.1 Place the battery (Fig 12, Item 20) onto the PCB (Fig 12, Item 10) ensuring the correct polarity.

25.2 Solder both the positive and negative connections.

25.3 Secure battery to PCB using tie wrap (Fig 12, Item 30).

25.4 Replace the PCB (Refer to Page 19, Section 23).

25.5 Re-fit the front case (Refer to Page 9, Section 9).

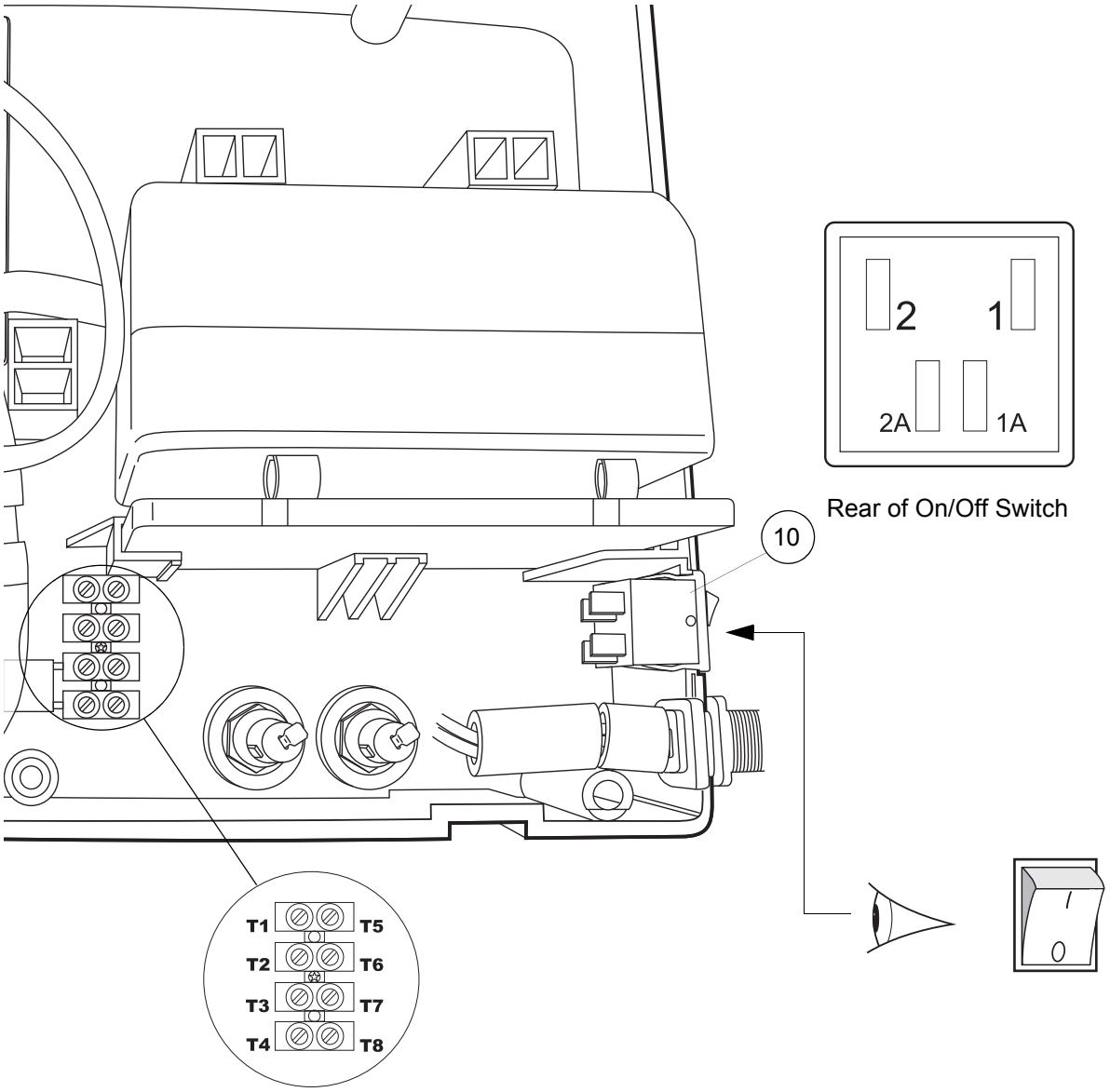


Figure 13 - Removing the On/Off Switch

Table 14 - On/Off Switch Parts

Item	Part Number	Description	Qty
10	648407	Mains (On/Off) Switch	1

26 Removing the On/Off Switch

26.1 Remove the front case (Refer to Page 9, Section 8).

26.2 Lift the On/Off switch (Fig 13, Item 10) away from the rear pump case.

26.3 Remove the two live spade connectors from the back of the On/Off Switch (terminals 1 and 1A).

26.4 Remove the two neutral spade connectors from the back of the On/Off Switch (terminals 2 and 2A).

26.5 You can now remove the On/Off Switch (Fig 13, Item 10).

27 Installing the On/Off Switch

27.1 Re-connect the live spade connector that runs from the Main PCB to terminal 1 (Refer to Figure 13)on the rear of the On/Off Switch.

27.2 Re-connect the live spade connector that runs from a fuse holder to terminal 1a (Refer to Figure 13) on the rear of the On/Off Switch.

27.3 Re-connect the neutral spade connector that runs from the Terminal block and Main PCB to spade terminal 2 (Refer to Figure 13) on the rear of the On/Off Switch.

27.4 Re-connect the neutral spade connector that runs from a fuse holder to spade terminal 2a (Refer to Figure 13) on the rear of the On/Off Switch.

27.5 Place the On/Off Switch (Fig 13, Item 10) into position in the rear case, ensuring the two live wires are facing outwards from the case.

27.6 Re-fit the front case (Refer to Page 9, Section 9).

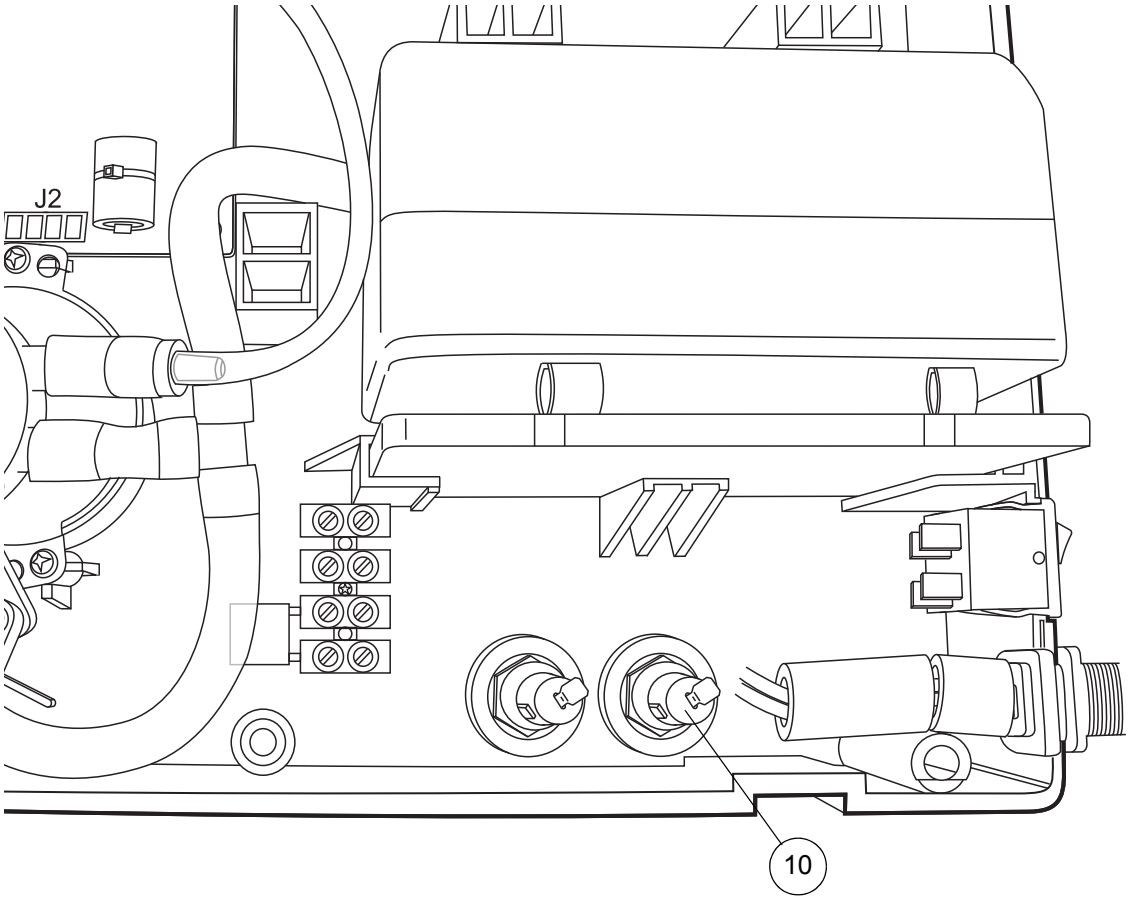


Figure 14 - Removing the Fuse Holder Housings

Table 15 - Fuse Holder Housings

Item	Part Number	Description	Qty
10	648406	Fuse Holder	2

28 Removing the Fuse Holder Housing

28.1 Remove the front case (Refer to Page 9, Section 8).

28.2 For the *right* Fuse Holder Housing:

28.2.1 Remove the live Mains/Power Cable spade connector from the side of the fuse holder.

28.2.2 Remove the live On/Off Switch spade connector from the top of the fuse holder.

28.2.3 Unscrew nut and remove the Fuse Holder from the pump.

28.3 For the *left* Fuse Holder Housing:

28.3.4 Remove the neutral Mains/Power Cable spade connector from the side of the fuse holder.

28.3.5 Remove the neutral On/Off Switch spade connector from the top of the fuse holder.

28.3.6 Unscrew nut and remove the Fuse Holder from the pump.

29 Installing the Fuse Holder Housing

29.1 For the *right* Fuse Holder Housing:

29.1.1 Secure the Fuse Holder to the pump.

29.1.2 Connect the live On/Off Switch spade connector to the top of the fuse holder.

29.1.3 Connect the live Mains/Power Cable spade connector to the side of the fuse holder.

29.2 For the *left* Fuse Holder Housing:

29.2.4 Secure the Fuse Holder to the pump.

29.2.5 Connect the neutral On/Off Switch spade connector to the top of the fuse holder.

29.2.6 Connect the neutral Mains/Power Cable spade connector to the side of the fuse holder.

29.3 Re-fit the front case (Refer to Page 9, Section 9).

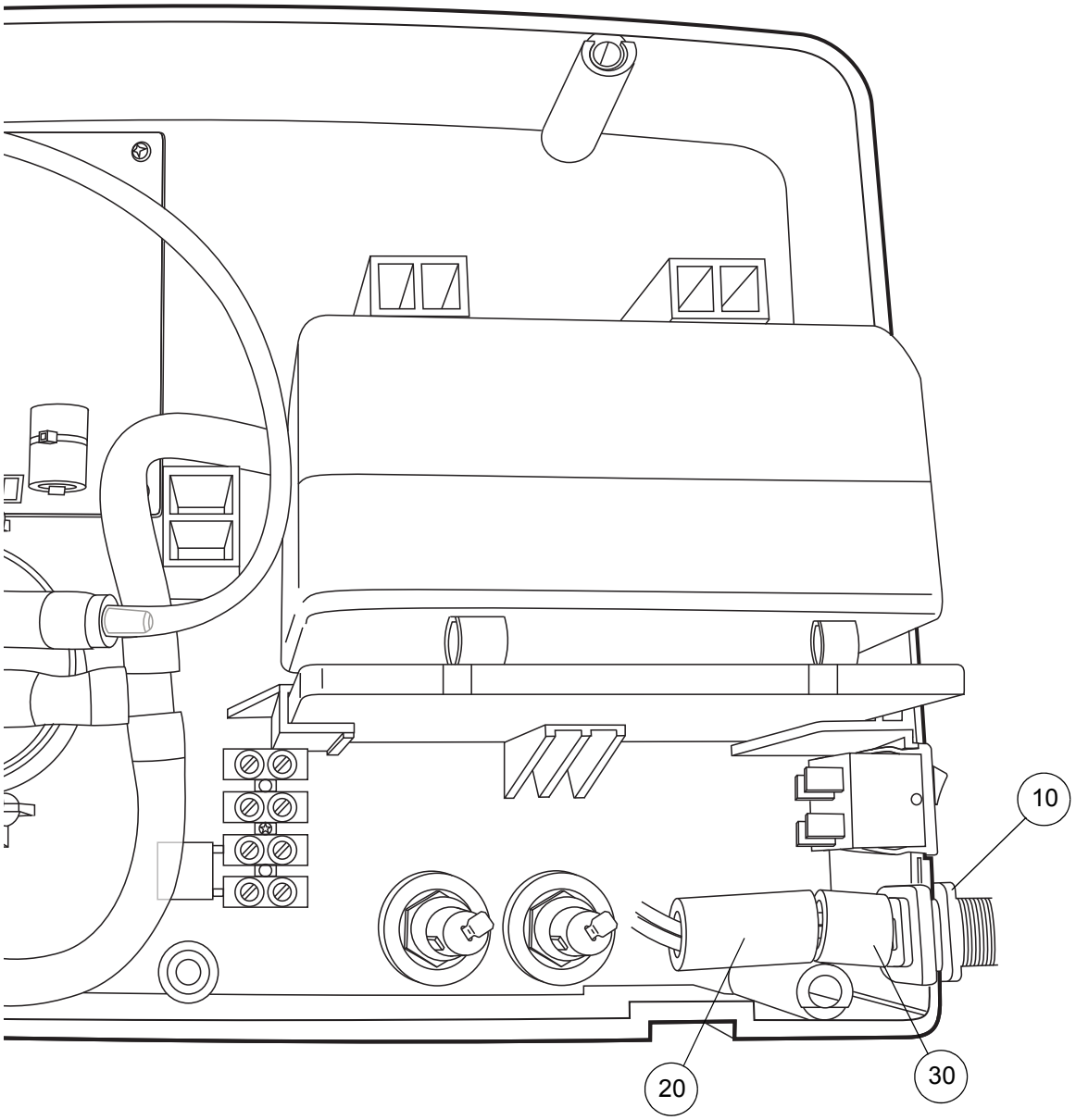


Figure 15 - Removing the Mains/Power Cable

Table 16 - Mains/Power Cable

Item	Part Number	Description	Qty
10	648410	Mains Cable Euro - Alpha Active 4	1
20	648447	Ferrite 28mm	1
30	648449	Ferrite 12mm	1

30 Removing the Mains/Power Cable

30.1 Remove the front case (Refer to Page 9, Section 8).

30.2 Remove the live spade connection from the side of the right fuse holder.

30.3 Remove the neutral spade connection from the side of the left fuse holder.

30.4 Remove the two ferrite beads from the Mains/Power Cable.

30.5 You can now remove the Mains/Power Cable.

31 Installing the Mains/Power Cable

31.1 Place the Mains/Power Cable in position in the side of the rear case.

31.2 Re-connect the neutral spade connector to the side of the left fuse holder.

31.3 Re-connect the live spade connector to the side of the right fuse holder.

31.4 Re-fit the front case (Refer to Page 9, Section 9).

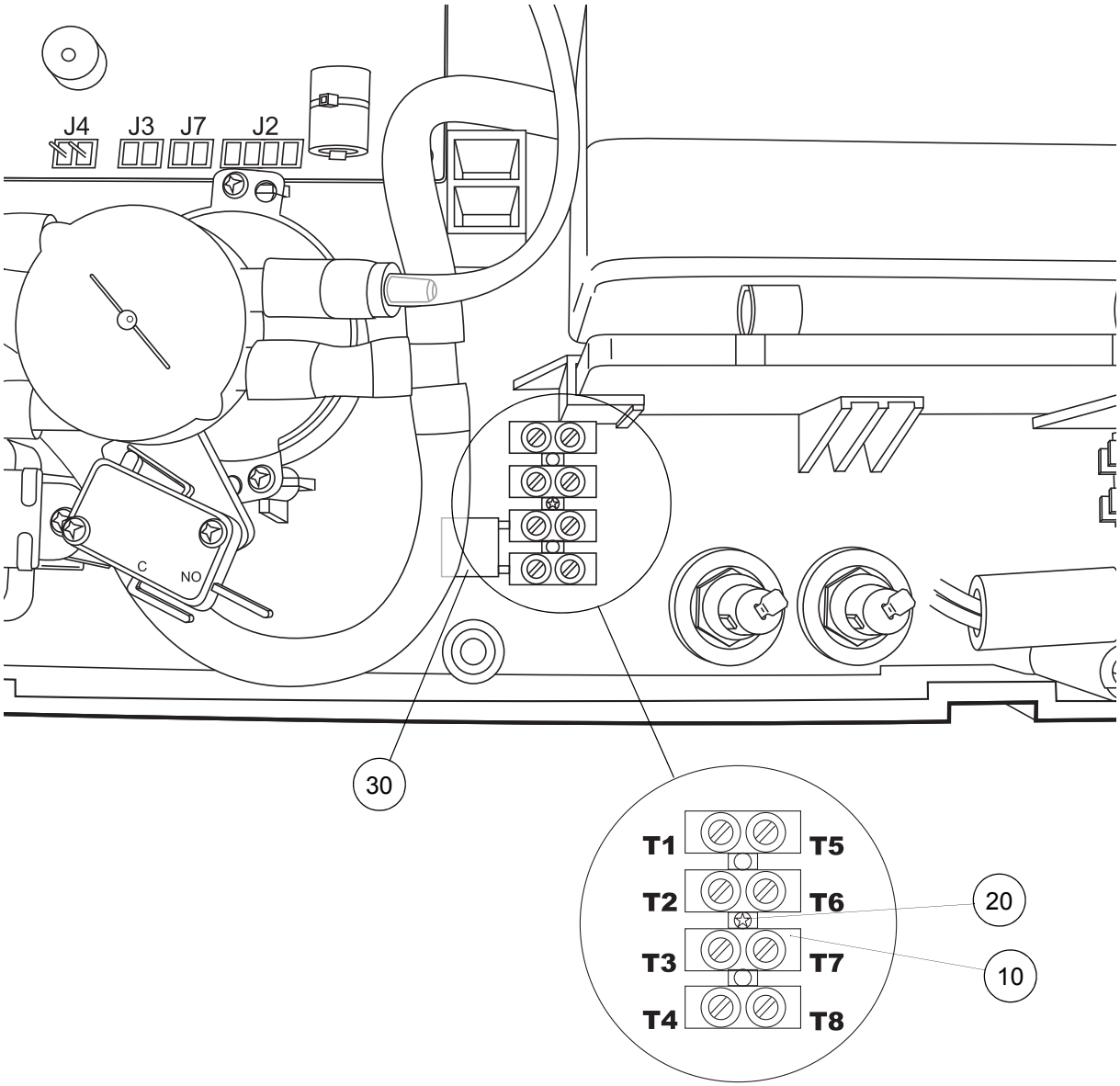


Figure 16 - Removing the Terminal Block

Table 17 - Terminal Block

Item	Part Number	Description	Qty
10	648425	Terminal Block Alpha Active 4	1
20	REF	Screw (M3x15mm Pozi Pan Head, PT Type)	1
30	648449	Filter Capacitor	1

32 Removing the Terminal Block

32.1 Remove the front case (Refer to Page 9, Section 8).

32.2 Remove the red Transformer wires and the capacitor from Terminals T3 and T4 on the Terminal Block (Fig 16, Item 10).

32.3 Remove the red Main PCB wires from Terminals T1 and T2 on the Terminal Block (Fig 16, Item 10).

32.4 Remove the two live wires from Terminal T8 on the Terminal Block (Fig 16, Item 10).

32.5 Remove the neutral wire from Terminal T7 on the Terminal Block (Fig 16, Item 10).

32.6 Remove the two red compressor wires from Terminals T5 and T6 on the Terminal Block (Fig 16, Item 10).

32.7 Remove the single securing screw (Fig 16, Item 20).

32.8 You can now remove the Terminal Block (Fig 16, Item 10).

33 Installing the Terminal Block

CAUTION: Whilst completing the installation, ensure all wires are free from entrapment.

33.1 Place the Terminal Block (Fig 16, Item 10) into position ensuring it is seated correctly.

33.2 Replace the single securing screw (Fig 16, Item 20).

33.3 Replace the two red compressor wires to Terminals T5 and T6 on the Terminal Block (Fig 16, Item 10).

33.4 Replace the neutral wire from the Main PCB Connector J2 and the On/Off switch to Terminal T7 on the Terminal Block (Fig 16, Item 10).

33.5 Replace the two live wires from the Main PCB Connector J2 and the On/Off switch to Terminal T8 on the Terminal Block (Fig 16, Item 10).

33.6 Replace the red Transformer wires, and the capacitor to Terminals T3 and T4 on the Terminal Block (Fig 16, Item 10).

33.7 Replace the red Main PCB wires to Terminals T1 and T2 on the Terminal Block (Fig 16, Item 10).

33.8 Re-fit the front case (Refer to Page 9, Section 9).

CHAPTER 6

MATTRESS REPAIR

1 General

This chapter details repair procedures for the **Alpha Active 4** Mattress Replacement. All repairs should be carried out by ArjoHuntleigh approved service personnel.

It is easier to carry out the repair procedures in this chapter if the mattress is fully deflated first. Disconnect the tubeset between the mattress and the pump to deflate the mattress.

After carrying out a service or any of these repairs on the mattress, check the following:

1.1 All press studs on the mattress are connected.

1.2 All cell assemblies are securely held by their straps. The repair will normally have disturbed the position of the other cells, and they should be re-positioned accordingly.

2 Alpha Active 4 Cell Layout

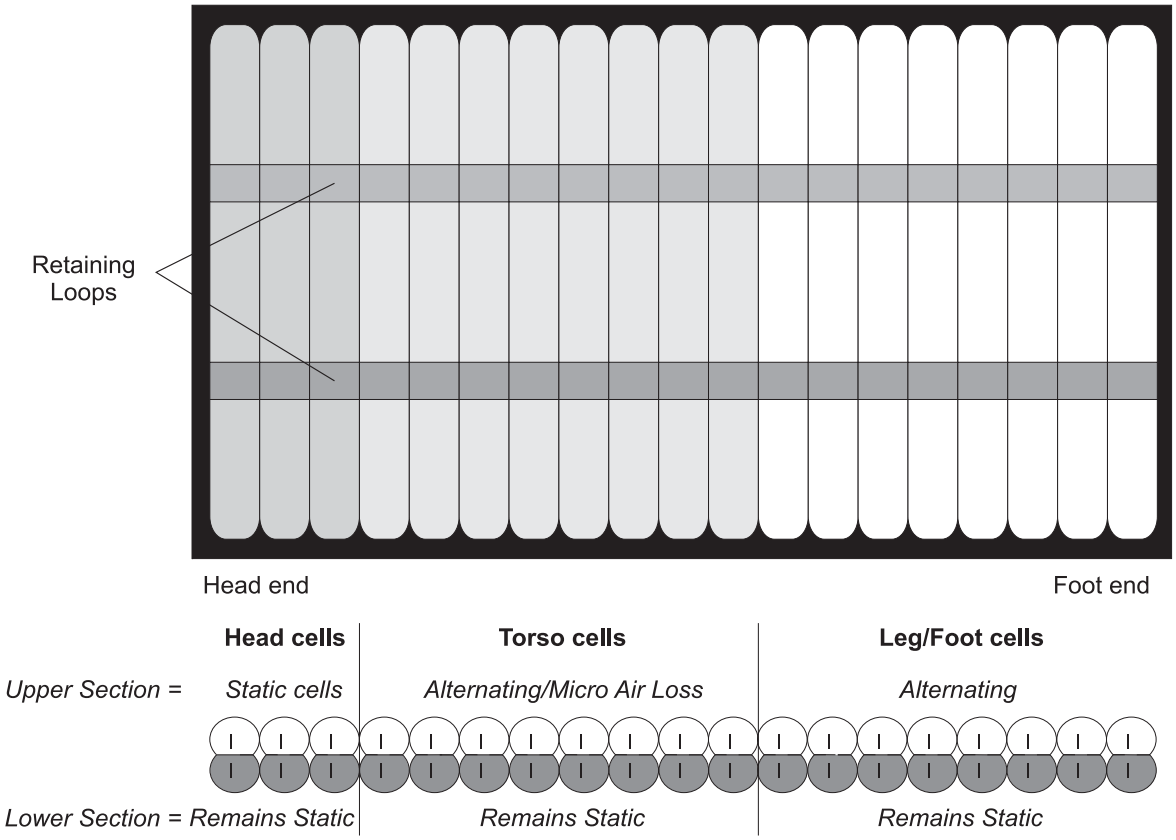


Figure 17 - Mattress Cell Layout

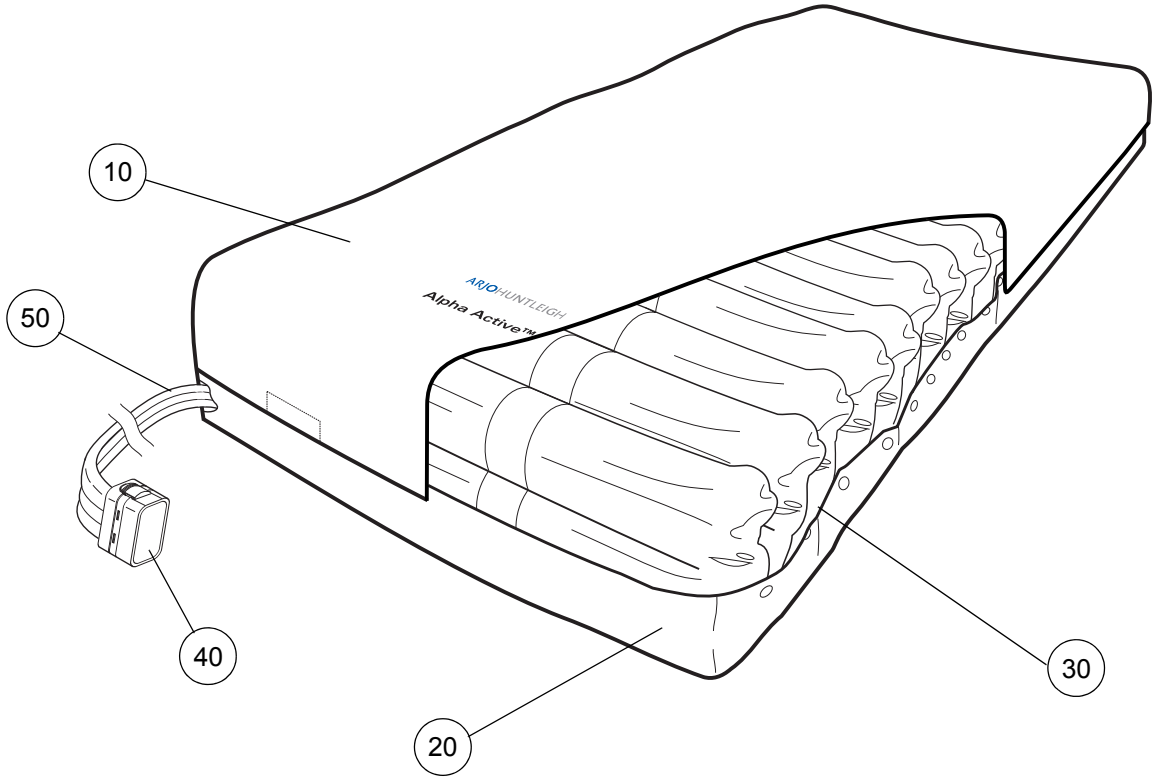


Figure 18 - Alpha Active 4 Mattress

Table 18 - Alpha Active 4 Mattress

Item	Part Number	Description	Qty
10	648437	Mattress Top Cover (90cm Wide)	1
-	648461	Mattress Top Cover (85cm Wide)	-
20	648438	Mattress Base Cover (90cm Wide)	1
	648463	Mattress Base Cover (85cm Wide)	
	648465	Mattress Base Cover PU (85cmWide)	
30	REF	Zip	2
40	648442	Tubeset Connector - Alpha Active 4	1
50	648443	Tri bore tubing. 9.5mm ID x 14.5mm OD x 1370mm	1

3 Removing The Top Cover

3.1 Fully unroll the mattress on a suitable surface.

3.2 Undo the zips (Fig 18, Item 30) on both sides of the top cover.

3.3 Remove the top cover.

4 Installing the Top Cover

4.1 Position the top cover (Fig 18, Item 10) on to the mattress. Make sure the feet symbol is at the foot end of the mattress.

4.2 Secure the two zips on the long sides of the mattress (Fig 18, Item 30) to the correct side of the top cover (Fig 18, Item 10).

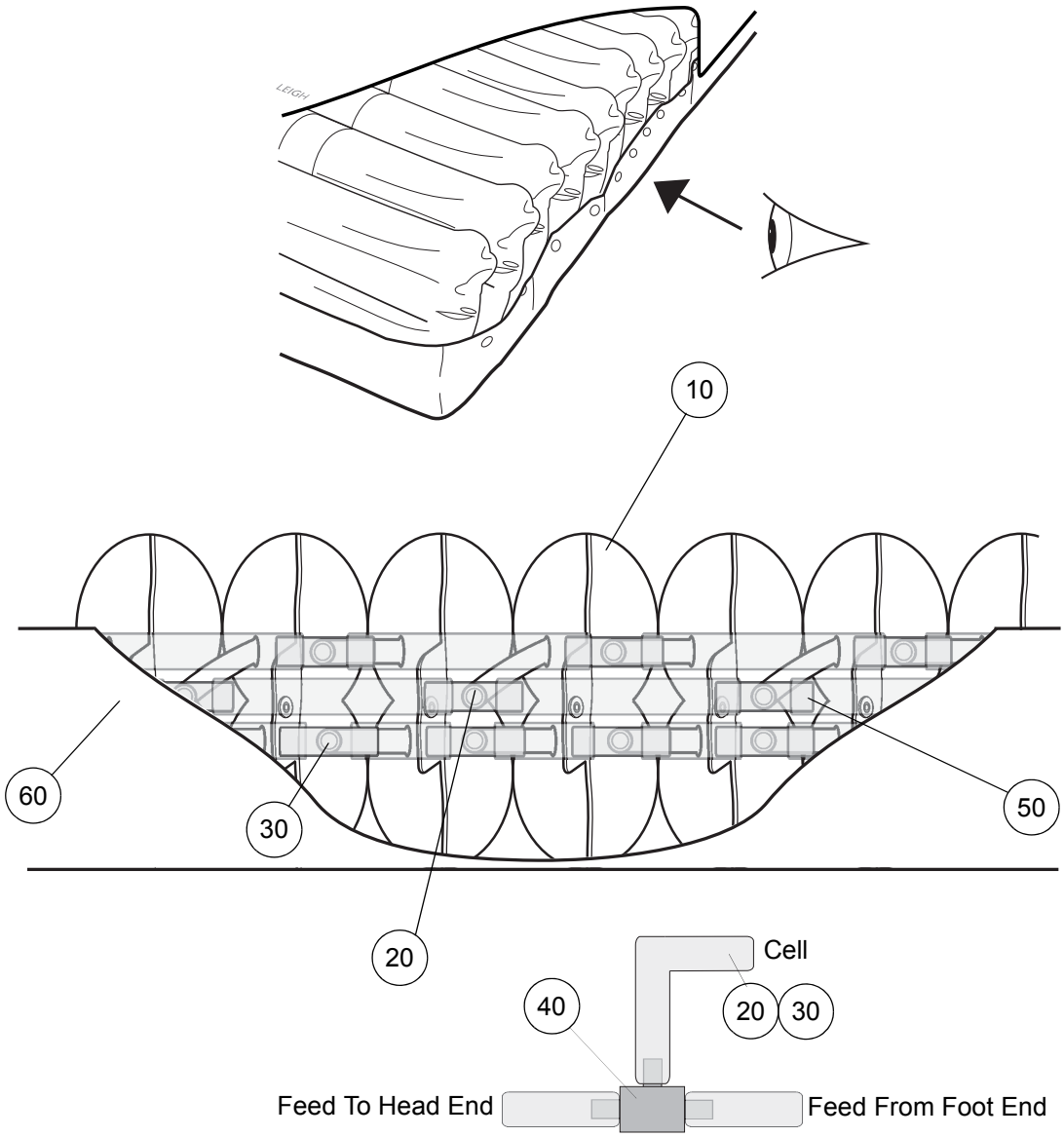


Figure 19 - Cell Assembly

5 Removing Cell Assembly

5.1 Remove the top cover, (Refer to Page 3, Section 3).

5.2 Disconnect the press studs from each end of the cell ((Fig 19, Item 60).

5.3 Disconnect the lower (Fig 19, Item 30) and upper (Fig 19, Item 20) cell feed connectors from the T-Pieces (Fig 19, Item 40).

5.4 Pull the cell out of the retaining loop in the base cover and remove from the mattress.

6 Installing Cell Assembly

6.1 Pass the cell through the loop on the air pad cover and centralise the cell.

6.2 Connect the upper (Fig 19, Item 20) and lower (Fig 19, Item 30) cell feed connectors to each T-Pieces (Fig 19, Item 40).

Note: *Installing the cell feeds is made easier if the cell connector and/or T-Piece is wetted immediately prior to insertion.*

6.3 Reconnect the male press studs to the female studs (Fig 19, Item 60) at the end of the cell.

6.4 Install the top cover (Refer to Page 3, Section 4).

Table 19 - Cell Assembly Parts List

Item	Part Number	Description	Qty
10	648439	Standard Cell (90cm Wide)	11
	648440	Ventilated Cell (90cm Wide)	8
	648467	Standard Cell (85cm Wide)	
	648468	Ventilated Cell (85cm Wide)	
	648470	Standard Cell PU(85cm Wide)	
	648471	Ventilated Cell PU (85cm Wide)	
20	REF	Upper Cell Feed (Part of Item 10)	-
30	REF	Lower (Static) Cell Feed (Part of Item 10)	-
40	REF	T-Piece	38
50	REF	Single Bore Tubing	-
-	REF	Press Stud Male	1
60	REF	Press Stud Female (Located Inside Mattress Base Cover)	1

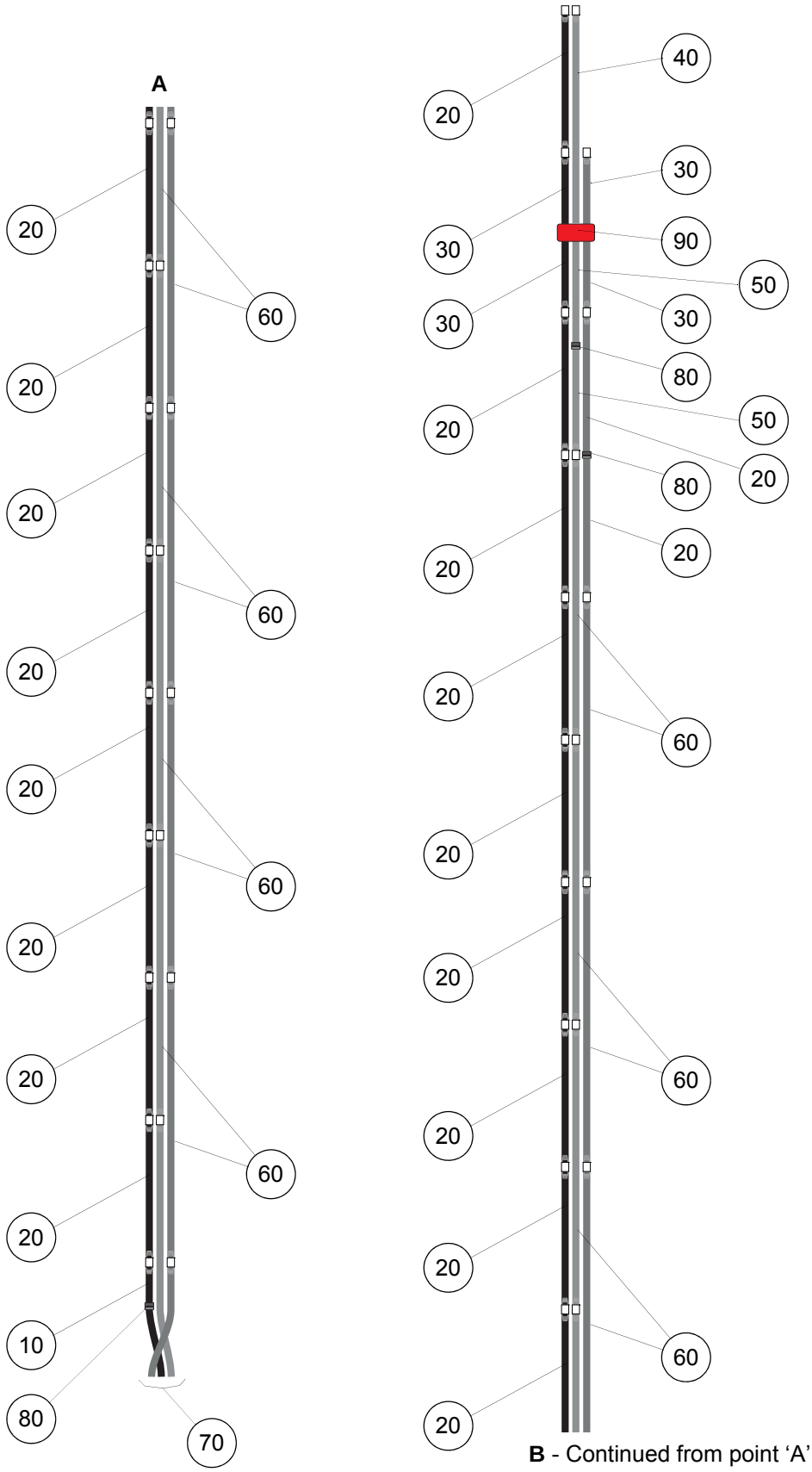


Figure 20 - Manifold Tubing

7 Replacing Manifold Tubing

7.1 Remove the top cover, (Refer to Page 3, Section 3).

7.2 Disconnect the press studs from each end of the cell ((Fig 19, Item 60).

7.3 Disconnect the lower (Fig 19, Item 30) and upper (Fig 19, Item 20) cell feed connectors from the T-Pieces (Fig 19, Item 40).

7.4 Connect the upper (Fig 19, Item 20) and lower (Fig 19, Item 30) cell feed connectors to each T-Pieces (Fig 19, Item 40).

Note: *Installing the cell feeds is made easier if the cell connector and/or T-Piece is wetted immediately prior to insertion.*

7.5 Reconnect the male press studs to the female studs (Fig 19, Item 60) at the end of the cell.

7.6 Install the top cover (Refer to Page 3, Section 4).

Table 20 - Cell Assembly Parts List

Item	Part Number	Description	Qty
10	REF	50mm (Cut to length from 648436)	
20	REF	84mm (Cut to length from 648436)	
30	REF	40mm (Cut to length from 648436)	
40	REF	140mm (Cut to length from 648436)	
50	REF	64mm (Cut to length from 648436)	
60	REF	184mm (Cut to length from 648436)	
-	648436	Single bore tubing: ID 9.5mm x OD14.5mm	
70	648443	Tri Bore Tubing	
80	648444	Static Check Valve	3
90	648441	CPR	1

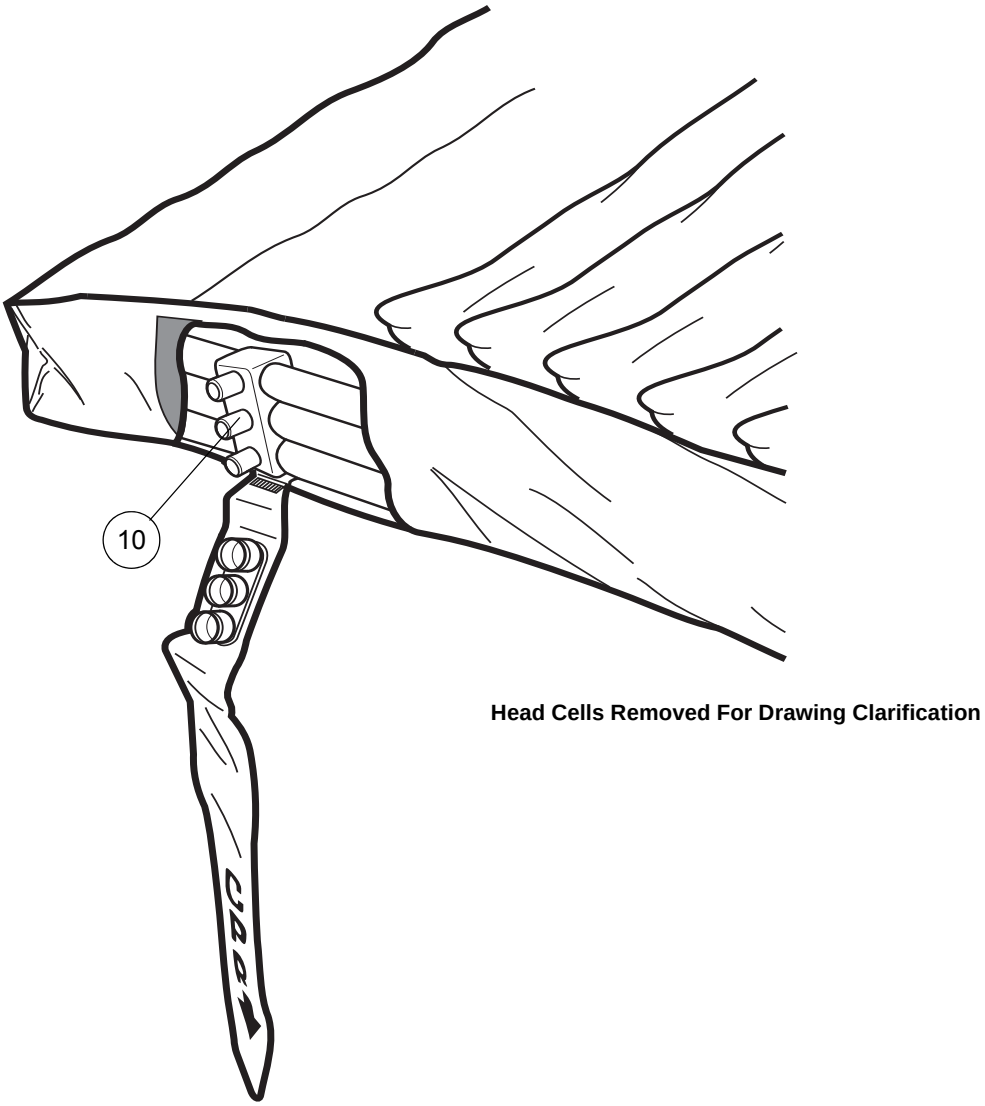


Figure 21 - CPR Assembly

Table 21 - CPR Assembly Parts List

Item	Part Number	Description	Qty
10	648441	CPR	1

8 Removing CPR Assembly

8.1 Remove the top cover, (Refer to Page 3, Section 3).

8.2 Disconnect the press studs from cells either side of the CPR assembly.

8.3 Disconnect the feed tubes from either side of the CPR unit.

8.4 Remove CPR Assembly from mattress (Fig 21, Item 10).

9 Installing CPR Assembly

9.1 Connect the feed tubes from either side of the CPR unit.

Note: *Installing the feed tubes is made easier if the CPR unit connectors are wetted immediately prior to insertion.*

9.2 Reconnect the press studs to each end of the cell.

9.3 Install the top cover (Refer to Page 3, Section 4).

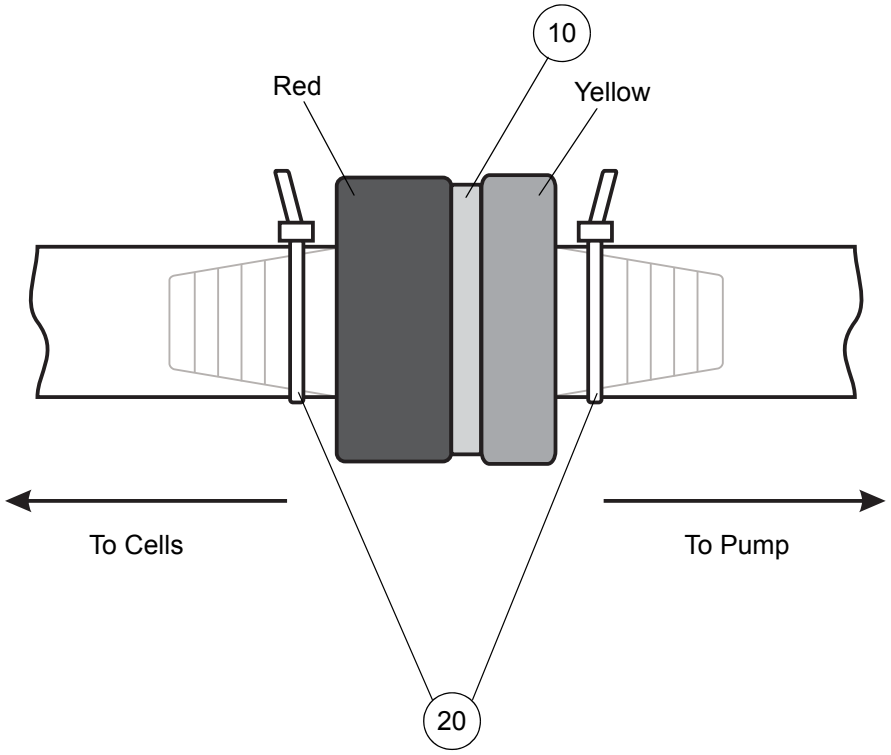


Figure 22 - Static Feed Check Valve

Table 22 - Static Section Feed Valve Parts List

Item	Part Number	Description	Qty
10	648444	Static Feed Check Valve	3
20	BP196	Tie Wrap	6

10 Removing Static Feed Check Valves

Note: *There are 3 Static Feed Check Valves on the Alpha Active 4. Two at the head end, and one at the foot end.*

10.1 Remove the top cover, (Refer to Page 3, Section 3).

10.2 Release the pop studs on three surrounding cells for easier access to the Check Valve.

10.3 Remove the two cable ties (Fig 22, Item 20) located on either side of the Check Valve (Fig 22, Item 10) barbs.

10.4 Seperate the tubes away from the Check Valve.

10.5 Remove the Check Valve (Fig 22, Item 10).

11 Installing Static Feed Check Valves

CAUTION: Ensure correct orientation is followed during this installation (Refer to Page 10, Figure 22).

11.1 Place the Check Valve (Fig 22, Item 10) in position.

11.2 Connect the two tubes to the Check Valve (Fig 22, Item 10) barbs.

11.3 Secure the tubing with two cable ties (Fig 22, Item 20).

11.4 Secure the three cells pop studs that were released in Para 10.2.

11.5 Install the top cover (Refer to Page 3, Section 4).

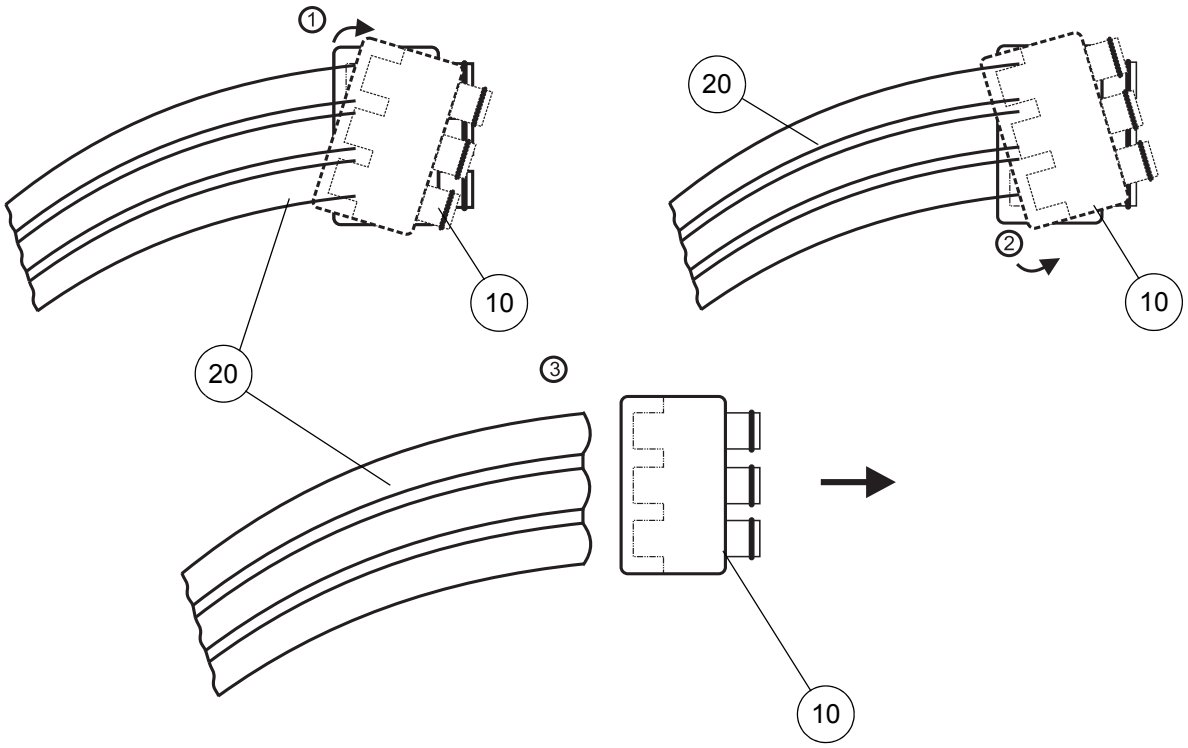


Figure 23 - 3-Way Connector

Table 23 - 3-Way Connector Parts List

Item	Part Number	Description	Qty
10	648442	3-Way Connector	1
20	648443	Tri bore tubing. 9.5mm ID x 14.5mm OD x 1370mm	1

12 Removing 3-Way Connector

12.1 With the tubeset (Fig 23, Item 20) held securely in one hand, pull the top of the 3-way connector (Fig 23, Item 10) away from the tubeset as shown in Figure 23 ①.

12.2 Pull the bottom of the 3-way connector away from the tubeset (Figure 23 ②).

12.3 You can now pull the 3-way connector away ③ (Fig 23, Item 10).

13 Installing 3-Way Connector

Note: *Orientation of this part is un-important.*

13.1 Align the tubeset (Fig 23, Item 20) with the barbs on the rear of the 3-way connector (Fig 23, Item 10).

13.2 Push the tubeset fully onto the connector until all three tubes contact the base of the connector.

13.3 Ensure the 3-way connector (Fig 23, Item 10) is securely fitted to the tubeset (Fig 23, Item 20).

CHAPTER 7

TECHNICAL SPECIFICATION

PUMP		
Model:	Alpha Active 4	
Part Numbers:	648311	UK
	648314	German
	648315	Euro
	648319AU	Australia
Supply Voltage:	230V	
Supply Frequency:	50-60Hz	
Power Input:	230VA	
Size:	(L)280mm x (W)205mm x (H)112mm	
Weight:	2.5kg	
Case Material:	ABS Plastic	
Plug Fuse Rating:	5A to BS1362 (UK ONLY)	
Pump Fuse Rating:	T1AL 250V	
Degree of protection against electric shock:	Class II, Double Insulated Type BF	
Degree of protection against liquid ingress:	IPX0	
Mode of operation:	Continuous	
Cycle Times:	**10 mins**	**20 mins**
	Inflate - 4.5 mins	Inflate - 9.5 mins
	Crossover - 30 secs	Crossover - 30 secs
	Deflate - 4.5 mins	Deflate - 9.5 mins
	Crossover - 30 secs	Crossover - 30 secs

SYMBOLS

O (Off)	Power Disconnects from the mains supply		Do not dispose of in the domestic refuse		Alternating Current		Double Insulated
I (On)	Power Connects to the mains supply		Refer to accompanying documents		Type BF		Refer to the User Manual
	Dangerous voltage		Fuse (If shown on pump label)	**Ref:**	Model number	**SN:**	Serial Number

ENVIRONMENTAL INFORMATION			
Condition	**Temperature Range**	**Relative Humidity**	**Atmospheric Pressure**
Operating (Pump)	+10°C to +40°C	30% to 75%	700hPa to 1060 hPa
Storage and Transport (Pump)	-40°C to +70°C	10% to 95% (non-condensing)	500 hPa to 1060 hPa

MATTRESS		
Description	**Cell Material**	**Base Pad Material**
ALPHA ACTIVE 4 MR 90	Polyurethane	PVC Nylon Coated
ALPHA ACTIVE 4 MR 85	Polyurethane	PVC Nylon Coated
ALPHA ACTIVE 4 MR Non PVC 85	Polyurethane	PU Coated

MATTRESS SIZE INFORMATION					
Part No.	**Description**	**Spare Cover**	**Length mm**	**Width mm**	**Height mm**
648322	ALPHA ACTIVE 4 MR 90	648437	1950 (77")	900(35")	200 (8")
648324	ALPHA ACTIVE 4 MR 85	648461	1950 (77")	850(33")	200 (8")
648326	ALPHA ACTIVE 4 MR 85 PU	648461	1950 (77")	850(33")	200 (8")

COVER SPECIFICATION	
Feature	**Standard Cover (Dartex)®**
Removable Cover	Yes
Moisture Vapour Permeable	Yes
Air Permeable	No
Low Friction	Yes
Water Resistant / Repellent	Yes
Infection Control	Material coating is Bacteriostatic, fungistatic, antimicrobial
Fire Retardant	BS 7175: 0,1 & 5
2-Way Stretch	Yes
Washing Conditions	MAX 95°C (203°F) for 15 mins(1)
Drying Conditions	Tumble Dry up to 130°C (266°F) or Air Dry
Life Span	50 Wash Cycles (minimum)
Application Area	Acute and Homecare

1. **Check your local policy to determine the time/temperature ratio required to achieve thermal disinfection.**

CLEANING SYMBOLS			
	Wash at 80°C (176°F)		Do not tumble dry above 50°C.
	Do not iron		Do Not Use Phenol-based cleaning Solutions
	Wipe surface with damp cloth		Use solution diluted to 1000 ppm of Available Chlorine

CHAPTER 8
SPARE PARTS

1 Pump Assembly Parts List

Part Number	Description	Fig - Item	Qty
648410	• Mains/Power Cable - Euro	15-10	1
648418	• Mains/Power Cable - UK	-	-
648419	• Mains/Power Cable - AUS	-	-
648447	• Ferite 28mm	15-20	1
648449	• Ferite 12mm	15-30	1
648401	• Front Case	6-10	1
648402	• Rear Case	3-10	1
648403	• Bed Hook	4-30	2
648404	• Air Filter	3-NA	1
648405	• Air Filter Grill	3-20	1
648420	• Display PCB	6-40	1
648421	• Main PCB	11-10	1
648428	• Battery	12-20	1
648425	• Terminal Block	16-10	1
648408	• Compressor	8-10	1
648422	• Rotor/Stator Assembly	9-10	1
648429	• Transformer	10-10	1
648449	• Filter Capacitor	16-30	1
MIS106	• Mains Fuse (1A Time Lag T Fuse)	5-20	2
648423	• Hose Connector Alpha Active 4	6-60	1
648406	• Fuse Holder	14-10	2
648407	• Mains Switich	13-10	1

2 Mattress Assembly Parts List

Part Number	Description	Fig - Item	Qty
648437	• Top Cover (195cm x 90cm) - printed with logo	18-10	1
648461	• Top Cover (195cm x 85cm) - printed with logo	-	-
648438	• Base Cover (195cm x 90cm)	18-20	1

Part Number	Description	Fig - Item	Qty
648463	• Base Cover (195cm x 85cm)	-	-
648465	• Base Cover PU (195cm x 85cm)	-	-
648442	• Tubeset Connector Alpha Active 4	23-10	1
648444	• Static Feed Check Valve	22-10	3
648441	• CPR Assembly	21-10	1
648439	• Standard Cell (90cm Wide)	19-10	11
648440	• Ventilated Cell (90cm Wide)	19-10	8
648467	• Standard Cell (85cm Wide)	-	-
648468	• Ventilated Cell (85cm Wide)	-	-
648470	• Standard Cell PU (85cm Wide)	-	-
648471	• Ventilated Cell PU (85cm Wide)	-	-
648436	• Single bore tubing	20-NA	-
648443	• Tri bore tubing	20-70	-
	•		
BP196	• Tie Wrap	20-21	6

CHAPTER 9

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